STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES

Division of Facilities Construction and Management

DFCM

Request For Bids For Construction Services

Two-Stage Bidding Process

Stage II
Invitation to Bid

May 4, 2006

UTAH VALLEY STATE COLLEGE AIRPORT HANGAR REMODEL

PROVO AIRPORT PROVO, UTAH

DFCM Project No. 06008790

John Vincent Architects
711 North 500 West
American Fork, Utah 84003

TABLE OF CONTENTS

Current copies of the following documents are hereby made part of these contract documents by reference. These documents are available on the DFCM web site at http://dfcm.utah.gov or are available upon request from DFCM:

DFCM General Conditions dated May 25, 2005
DFCM Application and Certificate for Payment dated May 25, 2005

Technical Specifications:
Drawings:

The Agreement and General Conditions dated May 25, 2005 have been updated from versions that were formally adopted and in use prior to this date. The changes made to the General Conditions are identified in a document entitled Revisions to General Conditions that is available on DFCM's web site at http://dfcm.utah.gov

INVITATION TO BID

ONLY CONTRACTORS PREVIOUSLY SHORT-LISTED DURING STAGE I ARE ALLOWED TO BID ON THIS PROJECT

The State of Utah - Division of Facilities Construction and Management (DFCM) is requesting bids for the construction of the following project:

UTAH VALLEY STATE COLLEGE AIRPORT HANGAR REMODEL
PROVO AIRPORT – PROVO, UTAH
DFCM PROJECT NO: 06008790

Project Description: Remodel the interior of the hangar according to construction documents.
Construction cost estimate: $ 200,000.00

FIRM NAME	POINT OF CONTACT	PHONE	FAX
ABCO Construction, Inc.	Mr. Reed Price	(435) 723-3770	(435) 723-3311
Ascent Construction	Mr. Dan Wall	(801) 299-1711	(801) 299-0663
Bellock Construction, Inc	Ms. Melody Bellock	(801) 277-7805	(801) 277-5751
Broderick and Henderson Const	Mr. Gary Broderick	(801) 225-9213	(801) 225-4697
Cal Wadsworth Construction	Mr. Cal Wadsworth	(801) 208-1957	(801) 208-1975
Chad Husband Construction, Inc	Mr. Richard Marshall	(801) 972-1146	(801) 886-1784
Comtrol Inc.	Mr. Ralph B. Burk	(801) 561-2263	(801) 561-2305
Darrell Anderson Construction	Mr. James Anderson	(435) 752-6860	(435) 752-7606
Garff Construction	Mr. Phil Henriksen	(801) 973-4248	(801) 972-1928
Gramoll Construction	Mr. Ken Romney	(801) 295-2341	(801) 295-2356
Jepson Construction	Mr. Rick Jepson	(801) 774-8860	(801) 773-8980
Keller Construction	Mr. S. Daniel Hill	(801) 972-1018	(801) 972-1063
McCullough Engineering	Mr. Jim McCullough	(801) 466-4949	(801) 466-4989
Saunders Construction	Mr. Edward Saunders	(801) 782-7830	(801) 782-7856
Valley Design and Construction	Mr. Corey King	(801) 927-9542	(801) 927-9544
Wade Payne Construction, Inc.	Mr. Wade Payne	(801) 226-6144	(801) 226-7772

The bid documents will be available at 4:00 PM on Thursday May 4, 2006 in electronic format from DFCM at 4110 State Office Building, Salt Lake City, Utah 84114, telephone (801) 538-3018 and on the DFCM web page at http://dfcm.utah.gov. For questions regarding this project, please contact Kurt Baxter, Project Manager, DFCM, at (801) 538-3174. No others are to be contacted regarding this project.

A **MANDATORY** pre-bid meeting and site visit will be held at 9:00 AM on Wednesday, May 10, 2006 at the Utah Valley State College Hangar at the Provo Airport, 1155 Flight Line Drive, Provo, Utah. All short listed prime contractors wishing to bid on this project must attend this meeting.

Bids must be submitted by 3:00 PM on May 23, 2006 to DFCM, 4110 State Office Building, Salt Lake City, Utah 84114. Bids will be opened and read aloud in the DFCM Conference Room, 4110 State Office Building, Salt Lake City, Utah. Note: Bids must be received at 4110 State Office Building by the specified time. The contractor shall comply with and require all of its subcontractors to comply with the license laws as required by the State of Utah. A bid bond in the amount of five percent (5%) of the bid amount, made payable to the Division of Facilities Construction and Management on DFCM's bid bond form, shall accompany the bid. The Division of Facilities Construction & Management reserves the right to reject any or all bids or to waive any formality or technicality in any bid in the interest of the State.

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
MARLA WORKMAN, CONTRACT COORDINATOR
4110 State Office Bldg., Salt Lake City, Utah 84114

STAGE II BIDDING PROCESS

ONLY CONTRACTORS PREVIOUSLY SHORT-LISTED DURING STAGE I ARE ALLOWED TO BID ON THIS PROJECT

1. Invitational Bid Procedures

Invitation to Bid: DFCM will notify each short-listed firm via e-mail and/or fax when a project is ready for construction services.

Bid Documents: Bidding documents including plans and specifications (if applicable) may be obtained by accessing DFCM's web page at http://dfcm.utah.gov or at DFCM's office 4110 State Office Building, Salt Lake City, Utah 84114.

Mandatory Pre-Bid Site Meeting: If required, the schedule contained in this document will indicate the date, time, and place of the mandatory pre-bid site meeting. At this meeting, contractors will receive additional instructions about the project and have an opportunity to ask questions about project details. If a firm fails to attend a pre-bid site meeting labeled "Mandatory" they will not be allowed to bid on the project.

Written Questions: The schedule contained in this document will indicate the deadline for submitting questions in writing to the DFCM Representative pertaining to this project.

Final Addendum: The schedule contained in this document will indicate the deadline for DFCM issuing the final addendum clarifying questions and changes to the scope of work. Contractors are responsible for obtaining and responding to information contained in the addenda.

Submitting Bids: Bids must be submitted to DFCM, 4110 State Office Building, Salt Lake City, Utah 84114 by the deadline indicated on the schedule contained in this document. Bids submitted after the deadline will not be accepted. Bids will be opened at DFCM on the date, time, and place indicated on the schedule. (Additional information pertaining to bidding is contained later in this document). It is your responsibility to allow for the time needed to park on Capitol Hill as recent construction activity has made the parking more difficult. Identification is required to enter the building.

Subcontractors List: The firm selected for the project must submit a list of all subcontractors by the deadline indicated on the schedule contained in this document. (Additional information pertaining to subcontractor lists is contained later in this document)

2. Drawings and Specifications, Other Contract Documents

Drawings and Specifications, as well as other available Contract Documents, may be obtained as stated in the Notice to Contractors.

3. **Bids**

Before submitting a bid, each bidder shall carefully examine the Contract Documents; shall visit the site of the Work; shall fully inform themselves as to all existing conditions and limitations; and shall include in the bid the cost of all items required by the Contract Documents. If the bidder observes that portions of the Contract Documents are at variance with applicable laws, building codes, rules, regulations or contain obvious erroneous or uncoordinated information, the bidder shall promptly notify the DFCM Representative and the necessary changes shall be accomplished by Addendum.

The bid, bearing original signatures, must be typed or handwritten in ink on the Bid Form provided in the procurement documents and submitted in a sealed envelope at the location specified by the Notice to Contractor's prior to the published deadline for the submission of bids.

Bid bond security, in the amount of five percent (5%) of the bid, made payable to the Division of Facilities Construction and Management, shall accompany bid. THE BID BOND MUST BE ON THE BID BOND FORM PROVIDED IN THE PROCUREMENT DOCUMENTS IN ORDER TO BE CONSIDERED AN ACCEPTABLE BID.

If the bid bond security is submitted on a bid bond form other than the DFCM's required bid bond form, and the bid security meets all other legal requirements, the bidder will be allowed to provide an acceptable bid bond by the close of business on the next business day following notification by DFCM of submission of a defective bid bond security. **Note: A cashier's check cannot be used as a substitute for a bid bond.**

4. **Contract and Bond**

The Contractor's Agreement will be in the form bound in the specifications. The Contract Time will be as indicated in the bid. The successful bidder, simultaneously with the execution of the Contract Agreement, will be required to furnish a performance bond and a payment bond, both bearing original signatures, upon the forms provided in the procurement documents. The performance and payment bonds shall be for an amount equal to one hundred percent (100%) of the Contract Sum and secured from a company that meets the requirements specified in the requisite forms. Any bonding requirements for Subcontractors will be specified in the Supplementary General Conditions.

5. Listing of Subcontractors

Listing of Subcontractors shall be as summarized in the "Instructions and Subcontractor's List Form", which are included as part of these Contract Documents. The subcontractors list shall be delivered to DFCM or faxed to DFCM at (801)538-3677 within 24 hours of the bid opening. Requirements for listing additional subcontractors will be listed in the Contract Documents.

DFCM retains the right to audit or take other steps necessary to confirm compliance with requirements for the listing and changing of subcontractors. Any contractor who is found to not be in compliance with these requirements is subject to a debarment hearing and may be debarred from consideration for award of contract for a period of up to three years.

6. Interpretation of Drawings and Specifications

If any person or entity contemplating submitting a bid is in doubt as to the meaning of any part of the drawings, specifications or other Contract Documents, such person shall submit to the DFCM Representative a request for an interpretation thereof. The person or entity submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by Addenda duly issued and a copy of such Addenda will be mailed or delivered to each person or entity receiving a set of documents. Neither DFCM nor A/E will be responsible for any other explanations or interpretations of the proposed documents. A/E shall be deemed to refer to the architect or engineer hired by DFCM as the A/E or Consultant for the Project.

7. Addenda

Any Addenda issued during the time of bidding shall become part of the Contract Documents made available to the bidders for the preparation of the bid, shall be covered in the bid, and shall be made a part of the Contract.

8. Award of Contract

The Contract will be awarded as soon as possible to the lowest, responsive and responsible bidder, based on the lowest combination of base bid and acceptable prioritized alternates, provided the bid is reasonable, is in the interests of the State of Utah to accept and after applying the Utah Preference Laws in U.C.A. Title 63, Chapter 56. The DFCM reserves the right to waive any technicalities or formalities in any bid or in the bidding. Alternates will be accepted on a prioritized basis with Alternate 1 being highest priority, Alternate 2 having second priority, etc.

9. DFCM Contractor Performance Rating

DFCM will evaluate the performance of the Contractor. This evaluation may include comments from the User. The Contractor will have an opportunity to review and comment on the evaluation. Evaluations, including the Contractor's comments, may be considered in future selection in the evaluation of the Contractor's past performance.

10. Licensure

The Contractor shall comply with and require all of its Subcontractors to comply with the license laws as required by the State of Utah.

11. Right to Reject Bids

DFCM reserves the right to reject any or all Bids.

12. Time is of the Essence

The completion deadline for this project is **September 15, 2006.** Failure to meet the completion deadline may result in a poor performance rating from DFCM which may have a negative impact on your firm's ability to obtain future work with the state of Utah and may also result in liquidated damages being assessed. Time is of the essence in regard to all the requirements of the Contract Documents.

13. Withdrawal of Bids

Bids may be withdrawn on written request received from bidders within 24 hours after the bid opening if the contractor has made an error in preparing the bid.

14. Product Approvals

Where reference is made to one or more proprietary products in the Contract Documents, but restrictive descriptive materials of one or more manufacturer(s) is referred to in the Contract Documents, the products of other manufacturers will be accepted, provided they equal or exceed

the standards set forth in the drawings and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the A/E. Such written approval must occur prior to the deadline established for the last scheduled addenda to be issued. The A/E's written approval will be in an issued Addendum. If the descriptive material is not restrictive, the products of other manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design as determined by the A/E.

15. **Financial Responsibility of Contractors, Subcontractors and Sub-subcontractors**

Contractors shall respond promptly to any inquiry in writing by the DFCM to any concern of financial responsibility of the Contractor, Subcontractor or Sub-subcontractor.

16. **Debarment**.

By submitting a bid, the Contractor certifies that neither it nor its principals, including project and site managers, have been, or are under consideration for, debarment or suspension, or any action that would exclude such from participation in a construction contract by any governmental department or agency. If the Contractor cannot certify this statement, attach to the bid a detailed written explanation which must be reviewed and approved by the DFCM as part of the requirements for award of the Project.

PROJECT SCHEDULE

Stage II = Two-Stage Bidding Process

PROJECT NAME: UTAH VALLEY STATE COLLEGE AIRPORT HANGAR REMODEL
PROVO AIRPORT – PROVO, UTAH
DFCM PROJECT # 06008790

Event	Day	Date	Time	Place
Stage II Bidding Documents Available	Thursday	May 4, 2006	4:00 PM	DFCM, 4110 State Office Building, SLC, UT and DFCM web site *
Mandatory Pre-bid Site Meeting	Wednesday	May 10, 2006	9:00 AM	UVSC Hangar 1155 Flight line Drive Provo Airport, Provo, UT
Last Day to Submit Questions	Tuesday	May 16, 2006	4:00 PM	DFCM, 4110 State Office Building, SLC, UT
Final Addendum Issued	Thursday	May 18, 2006	4:00 PM	DFCM, 4110 State Office Building, SLC, UT or DFCM web site*
Prime Contractors Turn in Bid and Bid Bond / Bid Opening in DFCM Conference Room	Tuesday	May 23, 2006	3:00 PM	DFCM, 4110 State Office Building, SLC, UT
Subcontractors List Due	Wednesday	May 24, 2006	4:00 PM	DFCM, 4110 State Office Building, SLC, UT
Project Completion Date	Friday	September 15, 2006	5:00 PM	

*** DFCM's web site address is http://dfcm.utah.gov**

BID FORM

NAME OF BIDDER _____ DATE _____

To the Division of Facilities Construction and Management
4110 State Office Building
Salt Lake City, Utah 84114

The undersigned, responsive to the "Notice to Contractors" and in accordance with the Request for Bids for the **UTAH VALLEY STATE COLLEGE AIRPORT HANGAR REMODEL - PROVO AIRPORT – PROVO, UTAH - DFCM PROJECT NO: 06008790** with all of the conditions surrounding the construction of the proposed Project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: _____

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS ($_____)
(In case of discrepancy, written amount shall govern)

I/We guarantee that the Work will be Substantially Complete by **September 15, 2006** after receipt of the Notice to Proceed, should I/we be the successful bidder, and agree to pay liquidated damages in the amount of **$250.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of _____

The undersigned Contractor's License Number for Utah is _____.

Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract. The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable l00% Performance and Payment bonds are not delivered within time set forth.

Type of Organization:

_____
(Corporation, Partnership, Individual, etc.)

Any request and information related to Utah Preference Laws:

_____

Respectfully submitted,

_____
Name of Bidder

ADDRESS:

_____

_____

_____
Authorized Signature

BID BOND

(Title 63, Chapter 56, U. C. A. l953, as Amended)

KNOW ALL PERSONS BY THESE PRESENTS:

That _____ hereinafter referred to as the "Principal," and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ and authorized to transact business in this State and U. S. Department of the Treasury Listed, (Circular 570, Companies Holding Certificates of Authority as Acceptable Securities on Federal Bonds and as Acceptable Reinsuring Companies); hereinafter referred to as the "Surety," are held and firmly bound unto the STATE OF UTAH, hereinafter referred to as the "Obligee," in the amount of $_____ (5% of the accompanying bid), being the sum of this Bond to which payment the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted to Obligee the accompanying bid incorporated by reference herein, dated as shown, to enter into a contract in writing for the _____ _____ Project.

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that if the said principal does not execute a contract and give bond to be approved by the Obligee for the faithful performance thereof within ten (10) days after being notified in writing of such contract to the principal, then the sum of the amount stated above will be forfeited to the State of Utah as liquidated damages and not as a penalty; if the said principal shall execute a contract and give bond to be approved by the Obligee for the faithful performance thereof within ten (10) days after being notified in writing of such contract to the Principal, then this obligation shall be null and void. It is expressly understood and agreed that the liability of the Surety for any and all defaults of the Principal hereunder shall be the full penal sum of this Bond. The Surety, for value received, hereby stipulates and agrees that obligations of the Surety under this Bond shall be for a term of sixty (60) days from actual date of the bid opening.

PROVIDED, HOWEVER, that this Bond is executed pursuant to provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended, and all liabilities on this Bond shall be determined in accordance with said provisions to same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals on the date indicated below, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

DATED this _____ day of _____, 20_____ .

Principal's name and address (if other than a corporation):

_____

_____

By: _____

Title: _____

Principal's name and address (if a corporation):

_____

_____

By: _____

Title: _____

(Affix Corporate Seal)

Surety's name and address:

_____

_____

By: _____

Attorney-in-Fact (Affix Corporate Seal)

STATE OF _____)
) ss.
COUNTY OF _____)

On this ____ day of _____, 20____, personally appeared before me _____, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he/she is the Attorney-in-fact of the above-named Surety Company, and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations, and that he/she acknowledged to me that as Attorney-in-fact executed the same.

Subscribed and sworn to before me this _____ day of _____, 20_____.
My Commission Expires: _____
Resides at: _____

_____
NOTARY PUBLIC

Agency: _____
Agent: _____
Address: _____
Phone: _____

Approved As To Form: May 25, 2005
By Alan S. Bachman, Asst Attorney General

INSTRUCTION AND SUBCONTRACTORS LIST FORM

The three low bidders, as well as all other bidders that desire to be considered, are required by law to submit to DFCM within 24 hours of bid opening a list of **ALL** first-tier subcontractors, including the subcontractor's name, bid amount and other information required by Building Board Rule and as stated in these Contract Documents, on the following basis:

PROJECTS UNDER $500,000 - ALL SUBS $20,000 OR OVER MUST BE LISTED
PROJECTS $500,000 OR MORE - ALL SUBS $35,000 OR OVER MUST BE LISTED

- Any additional subcontractors identified in the bid documents shall also be listed.
- The DFCM Director may not consider any bid submitted by a bidder if the bidder fails to submit a subcontractor list meeting the requirements of State law.
- List subcontractors for base bid as well as the impact on the list that the selection of any alternate may have.
- Bidder may not list more than one subcontractor to perform the same work.
- Bidder must list "Self" if performing work itself.

LICENSURE:

The subcontractor's name, the type of work, the subcontractor's bid amount, and the subcontractor's license number as issued by DOPL, if such license is required under Utah Law, shall be listed. Bidder shall certify that all subcontractors, required to be licensed, are licensed as required by State law. A subcontractor includes a trade contractor or specialty contractor and does not include suppliers who provide only materials, equipment, or supplies to a contractor or subcontractor.

BIDDER LISTING 'SELF' AS PERFORMING THE WORK:

Any bidder that is properly licensed for the particular work and intends to perform that work itself in lieu of a subcontractor that would otherwise be required to be on the subcontractor list, must insert the term 'Self' for that category on the subcontractor list form. Any listing of 'Self' on the sublist form shall also include the amount allocated for that work.

'SPECIAL EXCEPTION':

A bidder may list 'Special Exception' in place of a subcontractor when the bidder intends to obtain a subcontractor to perform the work at a later date because the bidder was unable to obtain a qualified or reasonable bid under the provisions of U.C.A.Section 63A-5-208(4). The bidder shall insert the term 'Special Exception' for that category of work, and shall provide documentation with the subcontractor list describing the bidder's efforts to obtain a bid of a qualified subcontractor at a reasonable cost and why the bidder was unable to obtain a qualified subcontractor bid. The Director must find that the bidder complied in good faith with State law requirements for any 'Special Exception' designation, in order for the bid to be considered. If awarded the contract, the Director shall supervise the bidder's efforts to obtain a qualified subcontractor bid. The amount of the awarded contract may not be adjusted to reflect the actual amount of the subcontractor's bid. Any listing of 'Special Exception' on the sublist form shall also include amount allocated for that work.

GROUNDS FOR DISQUALIFICATION:

The Director may not consider any bid submitted by a bidder if the bidder fails to submit a subcontractor list meeting the requirements of State law. Director may withhold awarding the contract to a particular bidder if one or more of the proposed subcontractors are considered by the Director to be unqualified to do the Work or for such other reason in the best interest of the State of Utah. Notwithstanding any other provision in these instructions, if there is a good faith error on the sublist form, at the sole discretion of the Director, the Director may provide notice to the contractor and the contractor shall have 24 hours to submit the correction to the Director. If such correction is submitted timely, then the sublist requirements shall be considered met.

CHANGES OF SUBCONTRACTORS SPECIFICALLY IDENTIFIED ON SUBLIST FORM:

Subsequent to twenty-four hours after the bid opening, the contractor may change its listed subcontractors only after receiving written permission from the Director based on complying with all of the following criteria.

(1) The contractor has established in writing that the change is in the best interest of the State and that the contractor establishes an appropriate reason for the change, which may include, but not is not limited to, the following reasons: the original subcontractor has failed to perform, or is not qualified or capable of performing, and/or the subcontractor has requested in writing to be released.
(2) The circumstances related to the request for the change do not indicate any bad faith in the original listing of the subcontractors.
(3) Any requirement set forth by the Director to ensure that the process used to select a new subcontractor does not give rise to bid shopping.
(4) Any increase in the cost of the subject subcontractor work is borne by the contractor.
(5) Any decrease in the cost of the subject subcontractor work shall result in a deductive change order being issued for the contract for such decreased amount.
(6) The Director will give substantial weight to whether the subcontractor has consented in writing to being removed unless the Contractor establishes that the subcontractor is not qualified for the work.

EXAMPLE:

Example of a list where there are only four subcontractors:

TYPE OF WORK	SUBCONTRACTOR, "SELF" OR "SPECIAL EXCEPTION"	SUBCONTRACTOR BID AMOUNT	CONT. LICENSE #
ELECTRICAL	ABCD Electric Inc.	$350,000.00	123456789000
LANDSCAPING	"Self"	300,000.00	123456789000
CONCRETE (ALTERNATE #1)	XYZ Concrete Inc	298,000.00	987654321000
MECHANICAL	"Special Exception" (attach documentation)	Fixed at: 350,000.00	(TO BE PROVIDED AFTER OBTAINING SUBCONTRACTOR)

PURSUANT TO STATE LAW - SUBCONTRACTOR BID AMOUNTS CONTAINED IN THIS SUBCNTRACTOR LIST SHALL NOT BE DISCLOSED UNTIL THE CONTRACT HAS BEEN AWARDED.

SUBCONTRACTORS LIST
FAX TO 801-538-3677

PROJECT TITLE: _____

Caution: You must read and comply fully with instructions.

TYPE OF WORK	SUBCONTRACTOR, "SELF" OR "SPECIAL EXCEPTION"	SUBCONTRACTOR BID AMOUNT	CONT. LICENSE #

We certify that:
1. This list includes all subcontractors as required by the instructions, including those related to the base bid as well as any alternates.
2. We have listed "Self" or "Special Exception" in accordance with the instructions.
3. All subcontractors are appropriately licensed as required by State law.

FIRM: _____

DATE: _____ SIGNED BY: _____

NOTICE: FAILURE TO SUBMIT THIS FORM, PROPERLY COMPLETED AND SIGNED, AS REQUIRED IN THESE CONTRACT DOCUMENTS, SHALL BE GROUNDS FOR DFCMS REFUSAL TO ENTER INTO A WRITTEN CONTRACT WITH BIDDER. ACTION MAY BE TAKEN AGAINST BIDDERS BID BOND AS DEEMED APPROPRIATE BY DFCM. ATTACH A SECOND PAGE IF NECESSARY.

FUGITIVE DUST PLAN

The Contractor will fill out the form and file the original with the Division of Air Quality and a copy of the form with the Division of Facilities Construction & Management, prior to the issuance of any notice to proceed.

The Contractor will be fully responsible for compliance with the Fugitive Dust Control Plan, including the adequacy of the plan, any damages, fines, liability, and penalty or other action that results from noncompliance.

Utah Division of Air Quality
April 20, 1999

GUIDANCE THAT MUST BE CONSIDERED IN DEVELOPING AND SUBMITTING A DUST CONTROL PLAN FOR COMPLIANCE WITH R307-309-3, 4, 5, 6, 7

Source Information:

1. Name of your operation (source): provide a name if the source is a construction site.

2. Address or location of your operation or construction site.

3. UTM coordinates or Longitude/Latitude of stationary emission points at your operation.

4. Lengths of the project, if temporary (time period).

5. Description of process (include all sources of dust and fugitive dust). Please, if necessary, use additional sheets of paper for this description. Be sure to mark it as an attachment.

6. Type of material processed or disturbed.

7. Amount of material processed (tons per year, tons per month, lbs./hr., and applicable units).

8. Destination of product (where will the material produced be used or transported, be specific, provide address or specific location), information needed for temporary relocation applicants.

9. Identify the individual who is responsible for the implementation and maintenance of fugitive dust control measures. List name(s), position(s) and telephone number(s).

10. List, and attach copies of any contract lease, liability agreement with other companies that may, or will, be responsible for dust control on site or on the project.

Description of Fugitive Dust Emission Activities
(Things to consider in addressing fugitive dust control strategies.)

1. Type of activities (drilling and blasting, road construction, development construction, earth moving and excavation, handling and hauling materials, cleaning and leveling, etc).

2. List type of equipment generating the fugitive dust.

3. Diagram the location of each activity or piece of equipment on site. Please attach the diagram.

4. Provide pictures or drawings of each activity. Include a drawing of the unpaved/paved road network used to move loads "on" and "off" property.

5. Vehicle miles travels on unpaved roads associated with the activity (average speed).

6. Type of dust emitted at each source (coal, cement, sand, soil, clay, dust, etc.)

7. Estimate the size of the release area at which the activity occurs (square miles). For haul or dirt roads include total miles of road in use during the activity.

Description of Fugitive Dust Emission Controls on Site

Control strategies must be designed to meet 20% opacity or less on site (a lesser opacity may be defined by Approval Order conditions or federal requirements such as NSPS), and control strategies must prevent exceeding 10% opacity from fugitive dust at the property boundary (site boundary) for compliance with R307-309-3.

1. Types of ongoing emission controls proposed for each activity, each piece of equipment, and haul roads.

2. Types of additional dust controls proposed for bare, exposed surfaces (chemical stabilization, synthetic cover, wind breaks, vegetative cover, etc).

3. Method of application of dust suppressant.

4. Frequency of application of dust suppressant.

5. Explain what triggers the use of a special control measure other than routine measures already in place, such as covered loads or measures covered by a permit condition (increase in opacity, high winds, citizen complaints, dry conditions, etc).

6. Explain in detail what control strategies/measures will be implemented off-hours, i.e., Saturdays/Sundays/Holidays, as well as 6 PM to 6 AM each day.

Description of Fugitive Dust Control Off-site

Prevent, to the maximum extent possible, deposition of materials, which may create fugitive dust on public and private paved roads in compliance with R307-309-5, 6, 7.

1. Types of emission controls initiated by your operation that are in place "off" property (application of water, covered loads, sweeping roads, vehicle cleaning, etc.).

2. Proposed remedial controls that will be initiated promptly if materials, which may create fugitive dust, are deposited on public and private paved roads.

Submit the Dust Control Plan to:

Executive Secretary
Utah Air Quality Board
POB 144820
15 North 1950 West
Salt Lake City, Utah 84114-4820

Phone: (801) 536-4000
FAX: (801) 536-4099

Fugitive Dust Control Plan Violation Report

When a source is found in violation of R307-309-3 or in violation of the Fugitive Dust Control Plan, the course must submit a report to the Executive Secretary within 15 days after receiving a Notice of Violation. The report must include the following information:

1. Name and address of dust source.

2. Time and duration of dust episode.

3. Meteorological conditions during the dust episode.

4. Total number and type of fugitive dust activities and dust producing equipment within each operation boundary. If no change has occurred from the existing dust control plan, the source should state that the activity/equipment is the same.

5. Fugitive dust activities or dust producing equipment that caused a violation of R-307-309-3 or the sources dust control plan.

6. Reasons for failing to control dust from the dust generating activity or equipment.

7. New and/or additional fugitive dust control strategies necessary to achieve compliance with R307-309-3, 4, 5, 6, or 7.

8. If it can not be demonstrated that the current approved Dust Control Plan can result in compliance with R307-309-3 through 7, the Dust Control Plan must be revised so as to demonstrate compliance with 307-309-3 through 7. Within 30 days of receiving a fugitive dust Notice of Violation, the source must submit the revised Plan to the Executive Secretary for review and approval.

Submit the Dust Control Plan to:

Executive Secretary
Utah Air Quality Board
POB 144820
15 North 1950 West
Salt Lake City, Utah 84114-4820

Phone: (801) 536-4000
FAX: (801) 536-4099

Attachments: DFCM Form FDR R-307-309, Rule 307-309

CONTRACTOR'S AGREEMENT

FOR:

_____
_____
_____

THIS CONTRACTOR'S AGREEMENT, made and entered into this ____ day of _____, 20__, by and between the DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT, hereinafter referred to as "DFCM", and _____, incorporated in the State of _____ and authorized to do business in the State of Utah, hereinafter referred to as "Contractor", whose address is _____.

WITNESSETH: WHEREAS, DFCM intends to have Work performed at _____ _____.

WHEREAS, Contractor agrees to perform the Work for the sum stated herein.

NOW, THEREFORE, DFCM and Contractor for the consideration provided in this Contractor's Agreement, agree as follows:

ARTICLE 1. SCOPE OF WORK. The Work to be performed shall be in accordance with the Contract Documents prepared by _____ and entitled "_____."

The DFCM General Conditions ("General Conditions") dated May 25, 2005 on file at the office of DFCM and available on the DFCM website, are hereby incorporated by reference as part of this Agreement and are included in the specifications for this Project. All terms used in this Contractor's Agreement shall be as defined in the Contract Documents, and in particular, the General Conditions.

The Contractor Agrees to furnish labor, materials and equipment to complete the Work as required in the Contract Documents which are hereby incorporated by reference. It is understood and agreed by the parties hereto that all Work shall be performed as required in the Contract Documents and shall be subject to inspection and approval of DFCM or its authorized representative. The relationship of the Contractor to the DFCM hereunder is that of an independent Contractor.

ARTICLE 2. CONTRACT SUM. The DFCM agrees to pay and the Contractor agrees to accept in full performance of this Contractor's Agreement, the sum of _____ _____ DOLLARS AND NO CENTS ($_____.00), which is the base bid, and which sum also includes the cost of a 100%

Performance Bond and a 100% Payment Bond as well as all insurance requirements of the Contractor. Said bonds have already been posted by the Contractor pursuant to State law. The required proof of insurance certificates have been delivered to DFCM in accordance with the General Conditions before the execution of this Contractor's Agreement.

ARTICLE 3. TIME OF COMPLETION AND DELAY REMEDY. The Work shall be Substantially Complete within _____ (___) calendar days after the date of the Notice to Proceed. Contractor agrees to pay liquidated damages in the amount of $_____ per day for each day after expiration of the Contract Time until the Contractor achieves Substantial Completion in accordance with the Contract Documents, if Contractor's delay makes the damages applicable. The provision for liquidated damages is: (a) to compensate the DFCM for delay only; (b) is provided for herein because actual damages can not be readily ascertained at the time of execution of this Contractor's Agreement; (c) is not a penalty; and (d) shall not prevent the DFCM from maintaining Claims for other non-delay damages, such as costs to complete or remedy defective Work.

No action shall be maintained by the Contractor, including its or Subcontractor or suppliers at any tier, against the DFCM or State of Utah for damages or other claims due to losses attributable to hindrances or delays from any cause whatsoever, including acts and omissions of the DFCM or its officers, employees or agents, except as expressly provided in the General Conditions. The Contractor may receive a written extension of time, signed by the DFCM, in which to complete the Work under this Contractor's Agreement in accordance with the General Conditions.

ARTICLE 4. CONTRACT DOCUMENTS. The Contract Documents consist of this Contractor's Agreement, the Conditions of the Contract (DFCM General Conditions, Supplementary and other Conditions), the Drawings, Specifications, Addenda and Modifications. The Contract Documents shall also include the bidding documents, including the Notice to Contractors, Instructions to Bidders/Proposers and the Bid/Proposal, to the extent not in conflict therewith and other documents and oral presentations that are documented as an attachment to the contract.

All such documents are hereby incorporated by reference herein. Any reference in this Contractor's Agreement to certain provisions of the Contract Documents shall in no way be construed as to lessen the importance or applicability of any other provisions of the Contract Documents.

ARTICLE 5. PAYMENT. The DFCM agrees to pay the Contractor from time to time as the Work progresses, but not more than once each month after the date of Notice to Proceed, and only upon Certificate of the A/E for Work performed during the preceding calendar month, ninety-five percent (95%) of the value of the labor performed and ninety-five percent (95%) of the value of materials furnished in place or on the site. The Contractor agrees to furnish to the DFCM invoices for materials purchased and on the site but not installed, for which the

Contractor requests payment and agrees to safeguard and protect such equipment or materials and is responsible for safekeeping thereof and if such be stolen, lost or destroyed, to replace same.

Such evidence of labor performed and materials furnished as the DFCM may reasonably require shall be supplied by the Contractor at the time of request for Certificate of Payment on account. Materials for which payment has been made cannot be removed from the job site without DFCM's written approval. Five percent (5%) of the earned amount shall be retained from each monthly payment. The retainage, including any additional retainage imposed and the release of any retainage, shall be in accordance with UCA 13-8-5 as amended. Contractor shall also comply with the requirements of UCA 13-8-5, including restrictions of retainage regarding subcontractors and the distribution of interest earned on the retention proceeds. The DFCM shall not be responsible for enforcing the Contractor's obligations under State law in fulfilling the retention law requirements with subcontractors at any tier.

ARTICLE 6. INDEBTEDNESS. Before final payment is made, the Contractor must submit evidence satisfactory to the DFCM that all payrolls, materials bills, subcontracts at any tier and outstanding indebtedness in connection with the Work have been properly paid. Final Payment will be made after receipt of said evidence, final acceptance of the Work by the DFCM as well as compliance with the applicable provisions of the General Conditions.

Contractor shall respond immediately to any inquiry in writing by DFCM as to any concern of financial responsibility and DFCM reserves the right to request any waivers, releases or bonds from Contractor in regard to any rights of Subcontractors (including suppliers) at any tier or any third parties prior to any payment by DFCM to Contractor.

ARTICLE 7. ADDITIONAL WORK. It is understood and agreed by the parties hereto that no money will be paid to the Contractor for additional labor or materials furnished unless a new contract in writing or a Modification hereof in accordance with the General Conditions and the Contract Documents for such additional labor or materials has been executed. The DFCM specifically reserves the right to modify or amend this Contractor's Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work.

ARTICLE 8. INSPECTIONS. The Work shall be inspected for acceptance in accordance with the General Conditions.

ARTICLE 9. DISPUTES. Any dispute, PRE or Claim between the parties shall be subject to the provisions of Article 7 of the General Conditions. DFCM reserves all rights to pursue its rights and remedies as provided in the General Conditions.

ARTICLE 10. TERMINATION, SUSPENSION OR ABANDONMENT. This Contractor's Agreement may be terminated, suspended or abandoned in accordance with the General Conditions.

ARTICLE 11. DFCM'S RIGHT TO WITHHOLD CERTAIN AMOUNT AND MAKE USE THEREOF. The DFCM may withhold from payment to the Contractor such amount as, in DFCM's judgment, may be necessary to pay just claims against the Contractor or Subcontractor at any tier for labor and services rendered and materials furnished in and about the Work. The DFCM may apply such withheld amounts for the payment of such claims in DFCM's discretion. In so doing, the DFCM shall be deemed the agent of Contractor and payment so made by the DFCM shall be considered as payment made under this Contractor's Agreement by the DFCM to the Contractor. DFCM shall not be liable to the Contractor for any such payment made in good faith. Such withholdings and payments may be made without prior approval of the Contractor and may be also be prior to any determination as a result of any dispute, PRE, Claim or litigation.

ARTICLE 12. INDEMNIFICATION. The Contractor shall comply with the indemnification provisions of the General Conditions.

ARTICLE 13. SUCCESSORS AND ASSIGNMENT OF CONTRACT. The DFCM and Contractor, respectively bind themselves, their partners, successors, assigns and legal representatives to the other party to this Agreement, and to partners, successors, assigns and legal representatives of such other party with respect to all covenants, provisions, rights and responsibilities of this Contractor's Agreement. The Contractor shall not assign this Contractor's Agreement without the prior written consent of the DFCM, nor shall the Contractor assign any moneys due or to become due as well as any rights under this Contractor's Agreement, without prior written consent of the DFCM.

ARTICLE 14. RELATIONSHIP OF THE PARTIES. The Contractor accepts the relationship of trust and confidence established by this Contractor's Agreement and covenants with the DFCM to cooperate with the DFCM and A/E and use the Contractor's best skill, efforts and judgment in furthering the interest of the DFCM; to furnish efficient business administration and supervision; to make best efforts to furnish at all times an adequate supply of workers and materials; and to perform the Work in the best and most expeditious and economic manner consistent with the interests of the DFCM.

ARTICLE 15. AUTHORITY TO EXECUTE AND PERFORM AGREEMENT. Contractor and DFCM each represent that the execution of this Contractor's Agreement and the performance thereunder is within their respective duly authorized powers.

ARTICLE 16. ATTORNEY FEES AND COSTS. Except as otherwise provided in the dispute resolution provisions of the General Conditions, the prevailing party shall be entitled to reasonable attorney fees and costs incurred in any action in the District Court and/or appellate body to enforce this Contractor's Agreement or recover damages or any other action as a result of a breach thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Contractor's Agreement on the day and year stated hereinabove.

CONTRACTOR: _____

_____
Signature Date

Title: _____

State of _____)
)
County of _____) _____
Please type/print name clearly

On this ____ day of _____, 20____, personally appeared before me, _____, whose identity is personally known to me (or proved to me on the basis of satisfactory evidence) and who by me duly sworn (or affirmed), did say that he (she) is the _____ (title or office) of the firm and that said document was signed by him (her) in behalf of said firm.

_____
Notary Public

(SEAL)

My Commission Expires _____

APPROVED AS TO AVAILABILITY OF FUNDS:

_____
Financial Manager, Date
Division of Facilities Construction and Management

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

_____
_____ Date
Manager -
Capital _____

APPROVED AS TO FORM:
ATTORNEY GENERAL
May 25, 2005
By: Alan S. Bachman
Asst Attorney General

APPROVED FOR EXPENDITURE:

_____
Division of Finance Date

PERFORMANCE BOND

(Title 63, Chapter 56, U. C. A. 1953, as Amended)

That _____ hereinafter referred to as the "Principal" and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____ and authorized to transact business in this State and U. S. Department of the Treasury Listed (Circular 570, Companies Holding Certificates of Authority as Acceptable Securities on Federal Bonds and as Acceptable Reinsuring Companies); hereinafter referred to as the "Surety," are held and firmly bound unto the State of Utah, hereinafter referred to as the "Obligee, " in the amount of _____ _____ DOLLARS ($_____) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____, 20____, to construct _____ in the County of _____, State of Utah, Project No. _____, for the approximate sum of _____ _____ Dollars ($_____), which Contract is hereby incorporated by reference herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall faithfully perform the Contract in accordance with the Contract Documents including, but not limited to, the Plans, Specifications and conditions thereof, the one year performance warranty, and the terms of the Contract as said Contract may be subject to Modifications or changes, then this obligation shall be void; otherwise it shall remain in full force and effect.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the state named herein or the heirs, executors, administrators or successors of the Owner.

The parties agree that the dispute provisions provided in the Contract Documents apply and shall constitute the sole dispute procedures of the parties.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the Provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended, and all liabilities on this Bond shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20_____.

WITNESS OR ATTESTATION:

_____

PRINCIPAL:

_____

By: _____

(Seal)

Title: _____

WITNESS OR ATTESTATION:

_____

SURETY:

_____

By: _____

Attorney-in-Fact (Seal)

STATE OF _____)

) ss.

COUNTY OF _____)

On this _____ day of _____, 20____, personally appeared before me _____, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he/she is the Attorney in-fact of the above-named Surety Company and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations, and that he/she acknowledged to me that as Attorney-in-fact executed the same.

Subscribed and sworn to before me this _____ day of _____, 20_____.

My commission expires: _____

Resides at: _____

_____

NOTARY PUBLIC

Agency: _____
Agent: _____
Address: _____
Phone: _____

Approved As To Form: May 25, 2005
By Alan S. Bachman, Asst Attorney General

PAYMENT BOND

(Title 63, Chapter 56, U. C. A. l953, as Amended)

KNOW ALL PERSONS BY THESE PRESENTS:

That _____ hereinafter referred to as the "Principal," and _____ _____, a corporation organized and existing under the laws of the State of _____authorized to do business in this State and U. S. Department of the Treasury Listed (Circular 570, Companies Holding Certificates of Authority as Acceptable Securities on Federal Bonds and as Acceptable Reinsuring Companies); with its principal office in the City of _____, hereinafter referred to as the "Surety," are held and firmly bound unto the State of Utah hereinafter referred to as the "Obligee," in the amount of _____ Dollars ($_____) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the _____ day of _____, 20____, to construct _____ in the County of _____, State of Utah, Project No. _____ for the approximate sum of _____ _____ Dollars ($_____), which contract is hereby incorporated by reference herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall pay all claimants supplying labor or materials to Principal or Principal's Subcontractors in compliance with the provisions of Title 63, Chapter 56, of Utah Code Annotated, l953, as amended, and in the prosecution of the Work provided for in said Contract, then, this obligation shall be void; otherwise it shall remain in full force and effect.

That said Surety to this Bond, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any way affect its obligation on this Bond, and does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to the Work or to the specifications or drawings and agrees that they shall become part of the Contract Documents.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended, and all liabilities on this Bond shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

WITNESS OR ATTESTATION:

_____

PRINCIPAL:

_____

By: _____

(Seal)

Title: _____

WITNESS OR ATTESTATION:

_____

SURETY:

_____

By: _____

Attorney-in-Fact (Seal)

STATE OF _____)
) ss.
COUNTY OF _____)

On this _____ day of _____, 20____, personally appeared before me _____ _____, whose identity is personally known to me or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he/she is the Attorney-in-fact of the above-named Surety Company, and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations, and that he/she acknowledged to me that as Attorney-in-fact executed the same.

Subscribed and sworn to before me this _____ day of _____, 20_____.

My commission expires: _____

Resides at: _____

_____

NOTARY PUBLIC

Agency: _____
Agent: _____
Address: _____
Phone: _____

Approved As To Form: May 25, 2005
By Alan S. Bachman, Asst Attorney General

CHANGE ORDER #_____

CONTRACTOR:

ARCHITECT:

AGENCY OR INSTITUTION:
PROJECT NAME:
PROJECT NUMBER:
CONTRACT NUMBER:
DATE:

CONSTRUCTION CHANGE DIRECTIVE NO.	PROPOSAL REQUEST NO.	AMOUNT		DAYS	
		INCREASE	DECREASE	INCREASE	DECREASE

	Amount	Days	Date
ORIGINAL CONTRACT			
TOTAL PREVIOUS CHANGE ORDERS			
TOTAL THIS CHANGE ORDER			
ADJUSTED CONTRACT			

DFCM and Contractor agree that the terms, contract sum, scope of the Work and time specified in this Change Order shall constitute the full accord and satisfaction, and complete adjustment to the Contract and includes all direct and indirect costs and effects related to, incidental to, and/or reasonably implied from such change in the contract terms, sum, scope of the Work and time.

Contractor:_____
Date

Architect/Engineer:_____
Date

Agency or Institution:_____
Date

DFCM: _____
Date

Funding Verification:_____
Date

STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES

Division of Facilities Construction and Management

DFCM

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT _____ PROJECT NO: _____

AGENCY/INSTITUTION _____

AREA ACCEPTED _____

The Work performed under the subject Contract has been reviewed on this date and found to be Substantially Completed as defined in the General Conditions; including that the construction is sufficiently completed in accordance with the Contract Documents, as modified by any change orders agreed to by the parties, so that the State of Utah can occupy the Project or specified area of the Project for the use for which it is intended.

The DFCM - (Owner) accepts the Project or specified area of the Project as Substantially Complete and will assume full possession of the Project or specified area of the Project at _____ (time) on _____ (date).

The DFCM accepts the Project for occupancy and agrees to assume full responsibility for maintenance and operation, including utilities and insurance, of the Project subject to the itemized responsibilities and/or exceptions noted below:

_____

_____

The Owner acknowledges receipt of the following closeout and transition materials:

☐ Record Drawings ☐ O & M Manuals ☐ Warranty Documents ☐ Completion of Training Requirements

A list of items to be completed or corrected (Punch List) is attached hereto. The failure to include an item on it does not alter the responsibility of the Contractor to complete all the Work in accordance with the Contract Documents, including authorized changes thereof. The amount of_____. (Twice the value of the punch list work) shall be retained to assure the completion of the punch list work.

The Contractor shall complete or correct the Work on the list of (Punch List) items appended hereto within _____ ____calendar days from the above date of issuance of this Certificate. If the list of items is not completed within the time allotted the Owner has the right to be compensated for the delays and/or complete the work with the help of independent contractor at the expense of the retained project funds. If the retained project funds are insufficient to cover the delay/completion damages, the Owner shall be promptly reimbursed for the balance of the funds needed to compensate the Owner.

_____ by: _____

CONTRACTOR (include name of firm) (Signature) DATE

_____ by: _____

A/E (include name of firm) (Signature) DATE

_____ by: _____

USING INSTITUTION OR AGENCY (Signature) DATE

_____ by: _____

DFCM (Owner) (Signature) DATE

4110 State Office Building, Salt Lake City, Utah 84114
telephone 801-538-3018 • facsimile 801-538-3267 • http://dfcm.utah.gov

cc: Parties Noted
DFCM, Director

S P E C I F I C A T I O N

UTAH VALLEY STATE COLLEGE
AIRPORT HANGER ADDITION

For

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
DFCM Project No. 06008790

SPECIFICATIONS

INDEX

LIST OF DRAWINGS

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Shop drawings.

E. Product data.

F. Samples.

G. Manufacturers' instructions.

H. Manufacturers' certificates.

1.02 RELATED SECTIONS

A. Section 01400 - Quality Control: Manufacturers' field services and reports.

B. Section 01700 - Contract Closeout: Contract, warranty, and manufacturer's certificates and closeout submittals.

1.03 SUBMITTAL PROCEDURES

A. Transmit each submittal to Architect/Engineer for approval.

B. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number (s) and specification section number, as appropriate.

C. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the work and contract documents.

D. Schedule submittals to expedite the project, and deliver to Architect/Engineer at business address. Coordinate submittal of related items.

E. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed work.

F. Provide space for Contractor and Architect/Engineer review stamps.

G. Revise and resubmit submittals as required; identify all changes made since previous submittal.

H. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.04 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 20 days after date established in Notice to

Proceed for Architect/Engineer review.

B. Revise and resubmit as required.

C. Submit computer generated network analysis diagram using the critical path, PERT method, or generally as outlined in Associated General Contractors of American (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".

D. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

E. Indicate estimated percentage of completion for each item of work at each submission.

F. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those Owner furnished and under allowances.

1.05 SHOP DRAWINGS

A. Submit the number of opaque reproductions which Contractor requires, plus four copies which will be retained by Architect/Engineer.

B. After review, reproduce and distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Contract Closeout.

1.06 PRODUCT DATA

A. Submit the number of copies which the Contractor requires, plus four copies which will be retained by the Architect/Engineer.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this project.

C. After review distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 - Contract Closeout.

1.07 SAMPLES

A. Submit samples to illustrate functional and aesthetic characteristics of the product with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect/Engineer's selection.

C. Include identification on each sample with full project information.

D. Submit the number of samples specified in individual specification sections; one of which will be retained by Architect/Engineer.

E. Reviewed samples which may be used in the work are indicated in individual specification sections.

1.08 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing in quantities specified for Product Data.

B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.09 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit manufacturers' certificate to Architect/Engineer for review in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect/Engineer.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Quality assurance and control of installation.

B. References.

C. Field samples.

D. Inspection and testing laboratory services.

E. Manufacturers' field services and reports.

1.02 RELATED SECTIONS

A. Section 01300 - Submittals Submission of Manufacturers' Instructions and Certificates.

B. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.04 REFERENCES

A. Conform to reference standard by date of issue current on date of Contract Documents.

B. Obtain copies of standards when required by Contract Documents.

C. Should specified reference standards conflict with Contract Documents, request clarification for Architect/Engineer before proceeding.

D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications sections for review.

B. Acceptable samples represent a quality level for the work.

C. Where field sample is specified in individual sections to be removed, clear area after field sample has been accepted by Architect/Engineer.

1.06 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations. Observer subject to approval of Architect/Engineer.

B. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable and to initiate instructions when necessary.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Submit report in duplicate within 30 days of observation to Architect/Engineer for review.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Products.

B. Transportation and handling.

C. Storage and protection.

D. Product options.

E. Substitutions.

1.02 RELATED SECTIONS

A. Section 01400 - Quality Control: Product quality monitoring.

1.03 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work.

B. Provide interchangeable components of the same manufacturer for similar components.

1.04 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.05 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight, climate controlled enclosures.

B. For exterior storage of fabricated products, place on sloped supports above ground.

C. Provide off-site storage and protection when site does not permit on-site storage or protection.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in a well-drained area. Provide mixing with foreign matter.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.06 PRODUCT OPTIONS

A. Products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not named.

1.07 SUBSTITUTIONS

A. Architect/Engineer will consider requests for substitutions only within 5 days of Bid Opening.

B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

D. A request constitutes a representation that the Bidder:
1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with reapproval by authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:
1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
3. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Adjusting.

D. Project record documents.

E. Operation and maintenance data.

F. Warranties.

G. Spare parts and maintenance materials.

1.02 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspections, Owner prefinal and final.

B. Provide submittals to Architect/Engineer and Owner that are required by governing or other authorities.

C. Submit final Application for Payment identifying total adjusted contract sum, previous payments, and sum remaining due.

D. Owner will occupy all portions of the building upon final acceptance of project.

1.03 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to a sanitary condition.

D. Clean and replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site, sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.04 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

A. Maintain on site, one set of the following record documents; record actual revisions to the work:
   1. Contract drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the contract.
   5. Reviewed shop drawings, product data, and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

E. Record documents and shop drawings: Legibly mark each item to record actual construction including.

F. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.06 OPERATION AND MAINTENANCE DATA

A. Submit three sets prior to final inspection bound in 8-1/2 x 11 inch text pages, three ring binders with durable plastic covers.

B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.

C. Internally subdivide the binder contents with permanent page dividers logically organized as described below with tab titling clearly printed under reinforced laminated plastic tabs.

D. Contents: Prepare a Table of Contents for each volume, with each product or system description identified.

E. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.

F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. Identify the following:
   1. Significant design criteria.
   2. List of equipment.
   3. Parts list for each component.
   4. Operating instructions.
   5. Maintenance instructions for equipment and systems.
   6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

G. Part 3: Project documents and certificates, including the following:
   1. Shop drawings and product data.
   2. Air and water balance reports.
   3. Certificates.
   4. Photocopies of warranties.

H. Submit one copy of completed volumes in final form at prefinal inspection. This copy will be returned with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

I. Submit final volumes revised within ten days after final inspection.

1.07 WARRANTIES

A. Provide duplicate notarized copies.

B. Execute and assemble documents from subcontractors, suppliers, and manufacturers.

C. Submit prior to final Application for Payment.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

B. Deliver to project site and place in location as directed by Owner; obtain receipt prior to final payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02072

MINOR DEMOLITION FOR REMODELING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Saw cutting and removal of designated concrete for new electrical under floor service.

B. Removal of designated construction.

C. Refer to items as indicated on the drawings.

1.02 REGULATORY REQUIREMENTS

A. Submit under provisions of GENERAL CONDITIONS.

B. Verify any utilities which may be in the area of demolition work.

1.03 REGULATORY REQUIREMENTS

A. Conform to I.B.C. code for demolition work, safety of structure, dust control and Owner access and exit requirements.

B. Notify and coordinate with Owner on affected utilities before starting work and comply with their requirements.

C. Do not close or obstruct egress width to exits.

D. Conform to procedures applicable when discovering hazardous or contaminated materials.

1.04 SEQUENCING

A. Sequence work under the provisions of GENERAL CONDITIONS and Owner operations.

1.05 SCHEDULING

A. Schedule work to coincide with new construction.

B. Describe demolition removal procedures and schedule.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 PREPARATION

A. Provide, erect, and maintain temporary barriers at locations required by remodel work.

B. Protect existing materials and Owner merchandise and fixtures which are not to be demolished.

C. Prevent movement or damage to structure; provide required bracing and shoring.

D. Mark location of utilities and verify with Owner before commencing cutting where utility lines are located in walls and floor/tunnel.

3.02 DEMOLITION REQUIREMENTS

A. Conduct demolition to minimize interference with adjacent occupied building spaces.

B. Cease operations immediately if structure appears to be in danger. Notify Architect/Engineer. Do not resume operations until directed.

C. Maintain protected egress and access to the Work.

3.03 DEMOLITION

A. Disconnect, remove, cap, and identify designated utilities within demolition areas. Make sure that Owner's equipment is isolated and off prior to cutting. Reconnect services to Owner equipment immediately required to business functions.

B. Demolish in an orderly and careful manner. Protect existing supporting structural members and provide any necessary shoring and bracing required..

C. Except where noted otherwise, remove demolished materials from site. Do not burn or bury materials on site.

D. Remove and legally dispose of all demolished materials from site as work progresses. Upon completion of work, leave areas in clean condition.

E. Remove temporary work.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cast-in-place concrete foundation footings and walls.

1.02 REFERENCES

A. ACI 301 - Structural Concrete for Buildings.

B. ACI 302 - Guide for Concrete Floor and Slab Construction.

C. ACI 308 - Standard Practice for Curing Concrete.

D. ACI 3 Building Code Requirements for Reinforced Concrete.

E. ASTM C33 - Concrete Aggregates.

F. ASTM C94 - Ready-Mixed Concrete.

G. ASTM C150 - Portland Cement.

1.03 PROJECT RECORD DOCUMENTS

A. Submit under provisions of GENERAL CONDITIONS.

B. Accurately record actual locations of embedded utilities and components which are concealed from view.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301.

B. Maintain one copy of each document on site.

C. Acquire cement and aggregate from same source for all work.

D. Conform to ACI 305R when concreting during hot weather.

E. Conform to ACI 306R when concreting during cold weather.

1.05 COORDINATION

A. Coordinate work under provisions GENERAL CONDITIONS.

B. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: ASTM C150, Type II - Normal manufactured by Portland Cement Co.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and not detrimental to concrete.

2.02 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94, requiring the concrete supplier to provide concrete to specified performance criteria.

B. Select proportions for normal weight concrete in accordance with ACI 301 requiring the concrete supplier to provide concrete to specific minimum water/cement ratio.

C. Provide concrete to the following criteria:
1. Compressive Strength 28 days: Foundations: 3,000 psi; W/C = 0.50; Floor Slabs: 4,000 psi, W/C = 0.45.
2. Slump: 2 to 3 inches.
3. Use 6 bag mix for 3,000 psi and 6-1/2 bag mix for 4,000 psi.
4. Aggregates: 3/4" per C33.
5. Exterior concrete is to be air-entrained with 6-1/2% plus or minus 1-1/2% air per C260.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions under provisions of GENERAL CONDITIONS.

B. Verify requirements for concrete cover over reinforcement. See drawings.

C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.02 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

B. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with nonshrink grout.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 304, ACI 301 and ACI 318.

B. Notify Architect/Engineer minimum 24 hours prior to commencement of operations.

C. Ensure reinforcement, inserts, embedded parts, formed joint fillers are not disturbed during concrete placement.

D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

E. Place concrete continuously between predetermined expansion, control, and construction joints.

F. Do not interrupt successive placement; do not permit cold joints to occur.

G. Screed slabs on grade level, maintaining surface flatness of maximum 1/8 inch in 10 ft and finish to existing slab on either side of new footing.

3.04 CONCRETE FINISHING

A. Steel trowel surfaces which are scheduled to be exposed.

3.05 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Cure floor surfaces in accordance with ACI 308.

D. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

3.06 FIELD QUALITY CONTROL

A. The Owner will employ a testing agency as recommended by the Architect.

B. Provide free access to Work and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm and structural engineer for preview prior to commencement of work.

D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.

E. Three concrete test cylinders will be taken for every 10 cu. yds. of each class of concrete placed. Testing lab shall be selected by Architect. Owner will pay for tests except for retesting when defective concrete is detected.

F. One slump test will be taken for each set of test cylinders taken.

3.07 DEFECTIVE CONCRETE

A. Defective Concrete: Pitting, spalling, or cracking concrete or concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Architect/Engineer.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

3.08 SCHEDULE - CONCRETE TYPES AND FINISHES

A. Concrete Slabs on Grade: 4,000 psi 28 day concrete. Steel trowel finishes depending on floor covering.

3.09 TWO (2) YEAR WRITTEN GUARANTEE

A. Provide two year written guarantee to Owner in form approved by architect to promptly remove and/or repair concrete as directed by architect at contractor's expense. New replacement work to carry similar two-year written guarantee. Guarantee shall start from date of Substantial Completion.

END OF SECTION

SECTION 06001

CARPENTRY WORK

PART 1 GENERAL

1.01 WORK INCLUDED

A. Rough carpentry and finish carpentry. Refer to Schedule located at the end of this Section.

1.02 RELATED WORK

A. Setting anchorage in stud walls for work of this Section.

B. Job layout and supervision of trades thru project.

C. Section 08712 - Hardware: Supply of cabinet hardware as required for this Section.

D. Section 09900 - Painting: Site finishing of finish carpentry and cabinetwork.

1.03 QUALITY ASSURANCE

A. Rough Carpentry Lumber: Visible grade stamp, of agency certified by National Forest Products Association (NFPA).

1.04 SUBMITTALS

A. Submit shop drawings under provisions of GENERAL CONDITIONS.

B. Submit samples under provisions of GENERAL CONDITIONS of standard colors and patterns of plastic laminate for Architect/Engineers selection.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver shop fabricated carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.

B. Store indoors, in ventilated areas with a constant, minimum temperature of 60 degrees F, maximum relative humidity of 25 to 55 percent.

PART 2 PRODUCTS

2.01 ROUGH CARPENTRY MATERIALS

A. Lumber: PS 20; graded in accordance with established Grading rules; maximum moisture content of 6 percent; of following species and grades:
   1. Structural Light Framing: Stress group Douglas Fir, Larch; No. 2 grade.
   2. Studding: Stress group Douglas Fir, Larch; stud grade.
   3. All wood plates and sills shall be No. 2 Hemlock, Fir, treated with 0.25#/ft. of CCAC.

B. Nails, Spikes and Staples: Galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations; size and type to suit application.

C. Bolts, Nuts, Washers, Lags, Pins and Screws: Medium carbon steel; sized to suit application, galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations.

D. Fasteners: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or power activated type for anchorage to steel.

E. Exposed Boards: Provide lumber with 19 percent maximum moisture content and any of the following species and grades:
   1. Species and Grade: Eastern white pine, D Select per NELMA or NLGA rules.
   2. Species and Grade: Western or Idaho white pine, Choice per NLGA or WWPA rules.

F. Fasteners: Size and type indicated. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A153 or of Type 304 stainless steel.
   1. Power-Driven Fasteners: CABO NER-272.

PART 3 EXECUTION

3.01 SCHEDULE

A. Rough Carpentry Work:
   1. Building layout and supervision.
   2. Framing and furring for wall finishes and stud walls.
   3. Miscellaneous furring and blocking.
   4. Setting and installation of doors, frames, and hardware.

B. Interior Finish Carpentry Work:
   1. Doors.
   2. Door hardware.

END OF SECTION

SECTION 06112

FRAMING

PART 1 GENERAL

1.01 WORK INCLUDED

A. Structural wall framing.

B. Preservative treatment of wood in contact with concrete.

1.02 REFERENCES

A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.

B. AWPA - American Wood Preservers' Association: Book of Standards.

C. NFPA - National Forest Products Association.

E. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.

F. WWPA - Western Wood Products Association.

1.03 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store and protect products under provisions of GENERAL CONDITIONS.

PART 2 PRODUCTS

2.01 LUMBER MATERIALS

A. Lumber Grading Rules: NFPA, WWPA.

B. Premanufactured/Engineered Trusses: Douglas Fir species, #2 and better grade, 2" and better size classification, 19 percent maximum moisture content.

C. Non-structural Light Framing: Douglas Fir species, #2 grade, 2" and better size classification, 19 percent maximum moisture content.

D. Studding: Douglas Fir species, #2 and better grade, 2" and better size classification, 19 percent maximum moisture content.

2.02 ACCESSORIES

A. Fasteners: Hot-dipped galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.

B. Drywall Screws: Bugle head, steel, power driven type length of three times thickness of sheathing.

2.03 WOOD TREATMENT

A. Wood Preservative (Surface Application): Clear, type; manufactured by 'Penta'.

PART 3 EXECUTION

3.01 SITE APPLIED WOOD TREATMENT

A. Brush apply one coat of preservative treatment on wood in contact with cementitious materials.

B. Apply preservative treatment in accordance with manufacturer's instructions.

C. Treat site-sawn ends.

D. Allow preservative to cure prior to erecting members.

3.02 FRAMING

A. Erect wood framing members level and plumb.

B. Construct framing members full length without splices.

3.03 TOLERANCES

A. Framing Members: 1/4 inch maximum from true position.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparing sealant substrate surfaces.

B. Sealant and backing.

1.02 RELATED SECTIONS

A. Section 08111 - Standard Steel Framing: Sealants used in conjunction with door frames.

1.03 REFERENCES

A. ASTM C790 - Use of Latex Sealing Compounds.

B. FS TT-S-00227 - Sealing Compound: Elastomeric Type, Multi-Component.

1.04 SUBMITTALS

A. Submit product data under provisions of GENERAL CONDITIONS.

B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, and color availability.

1.05 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum 3 years documented experience.

B. Conform to Sealant and Waterproofers Institute requirements for materials and installation.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not install solvent curing sealants in enclosed building spaces.

B. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 SEQUENCING AND SCHEDULING

A. Coordinate the work of this Section with all Sections referencing this Section.

1.08 WARRANTY

A. Provide 3 year warranty.

B. Warranty: Include coverage of installed sealants and accessories which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 SEALANTS

A. Polysulphide Sealant: FS TT-S-00227, Type II - non-sag, Class A; white color; manufactured by Thiokol; color to match surrounding surfaces.

2.02 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: ANSI/ASTM D1056; round, cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.

B. Beginning of installation means installer accepts existing surfaces.

3.02 PREPARATION

A. Clean and prime joints in accordance with manufacturer's instructions.

B. Remove loose materials and foreign matter which might impair adhesion of sealant.

C. Verify that joint backing and release tapes are compatible with sealant.

D. Perform preparation in accordance with sealant manufacturer's instructions.

E. Protect elements surrounding the work of this Section from damage or disfiguration.

3.03 INSTALLATION

A. Install sealant in accordance with manufacturer's instructions.

B. Measure joint dimensions and size materials to achieve required width/depth ratios.

C. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.

D. Install bond breaker where joint backing is not used.

E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Tool joints concave.

3.04 CLEANING AND REPAIRING

A. Clean work under provisions of GENERAL CONDITIONS.

B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of GENERAL CONDITIONS.

B. Protect sealants until cured.

END OF SECTION

SECTION 08111

STANDARD STEEL DOOR FRAMES

PART 1 GENERAL

1.01 WORK INCLUDED

A. Rated and non-rated frames for metal doors.

1.02 RELATED WORK

A. Section 08712 - Hardware.

B. Section 09900 - Painting: Field painting of door frames.

1.03 REFERENCES

A. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

B. SDI-100 - Standard Steel Doors and Frames.

C. SDI-105 - Recommended Erection Instructions for Steel Frames.

1.04 QUALITY ASSURANCE

A. Conform to requirements of SDI-100.

1.05 SUBMITTALS

A. Submit shop drawings and product data under provisions of GENERAL CONDITIONS.

B. Indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, and finish.

C. Submit manufacturer’s installation instructions under provisions of GENERAL CONDITIONS.

1.06 DELIVERY, STORAGE AND PROTECTION

A. Protect products under provisions of GENERAL CONDITIONS.

B. Protect door frames with resilient packaging sealed with heat shrunk plastic.

C. Break seal on-site to permit ventilation.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Amweld

B. Republic

C. Kewanee

D. Steelcraft

E. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 DOOR FRAMES

A. Interior Frames: 16 gage thick material, core thickness. To suit grade and model of door.

2.03 ACCESSORIES

A. Rubber Silencers Resilient rubber.

2.04 PROTECTIVE COATINGS

A. Primer: Zinc chromate baked gray primer type.

2.05 FABRICATION

A. Fabricate frames as welded unit type.

B. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.

C. Prepare frame for silencers. Provide three single rubber silencers for single doors and mullions of double doors on strike side, and two single silencers on frame head at double doors without mullions.

2.06 FINISH

A. Primer: Baked on.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install frames in accordance with SDI-105.

B. Coordinate with masonry, wallboard, and wall construction for anchor placement.

3.02 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.03 ADJUSTING AND CLEANING

A. Adjust hardware for smooth and balanced door movement.

END OF SECTION

SECTION 08712

DOOR HARDWARE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Hardware for doors.

1.02 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish templates to Section 08111 - Standard Frames for doors.

B. Furnish door hardware to Section 06001 - Carpentry Work for installation.

1.03 RELATED WORK

A. Section 06001 - Carpentry Work: Door frames.

B. Section 08111 - Standard Galvanized Steel Door Frames.

1.04 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.

B. BHMA - Builders' Hardware Manufacturers Association.

C. DHI - Door and Hardware Institute.

B. NFPA 101 - Life Safety Code.

E. SDI - Steel Door Institute.

1.05 COORDINATION

A. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for door hardware.

1.06 QUALITY ASSURANCE

A. Manufacturers: Companies specializing in manufacturing door hardware with minimum three years experience.

B. Hardware Supplier: Company specializing in supplying commercial door hardware with three years experience and approved by manufacturer.

C. Hardware Supplier Personnel: Employ a qualified person to assist in the work of this Section.

1.07 REGULATORY REQUIREMENTS

A. Conform to I. B. C. and A. D. A. for requirements.

B. Conform to the applicable sections of Chapter 5 of NFPA 101.

1.08 SUBMITTALS

A. Submit schedule, shop drawings, and product data under provisions of GENERAL CONDITIONS.

B. Indicate locations and mounting heights of each type of hardware to comply with handicapped and State of Utah standards.

C. Provide product data on specified hardware.

D. Submit manufacturer's parts lists, templates, and installation instructions.

1.09 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of GENERAL CONDITIONS.

B. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of GENERAL CONDITIONS.

B. Store and protect products under provisions of GENERAL CONDITIONS.

C. Package hardware items individually; label and identify package with door opening code to match hardware schedule.

D. Deliver keys to Owner by security shipment direct from hardware supplier.

E. Protect hardware from theft by cataloging and storing in secure area.

1.11 WARRANTY

A. Provide five year warranty.

B. Warranty: Include coverage of door closers, locksets, cylinders, and hinges.

1.12 MAINTENANCE MATERIALS

A. Provide special wrenches and tools applicable to each different or special hardware component.

B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.01 ACCEPTABLE SUPPLIERS

A. Best

B. Russwin

C. Sargeant

D. Corbin

E. Substitutions: Under provisions of GENERAL CONDITIONS and Architect approval (5) working days prior to bidding.

2.02 ACCEPTABLE MANUFACTURERS

A. Hinges: Stanley, Hagar, Corbin

B. Latch Sets: Best, Corbin, Russwin

C. Substitutions: Under provisions of GENERAL CONDITIONS and Architect approval (5) working days prior to bidding. Approval by State, National Guard required.

2.03 KEYING

A. Door Locks: Keyed in like-groups and Master keyed to existing building system including construction keying. (Facility key system is 'Best'; must be 'Best' cores or accept 'Best'.)

B. Supply 2 keys for each lock.

C. Supply keys in the following quantities:
1. 2 master keys. (Key to existing building system.)
2. 2 construction keys.

2.04 FINISHES

A. Finishes are identified in Schedule at end of this Section.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.

B. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions.

B. Use the templates provided by hardware item manufacturer.

C. Mounting heights for hardware from finished floor to center line of hardware item:

1.	Locksets:	40-5/16 inches
2.	Push/Pulls:	45 inches
3.	Dead Locks:	48 inches
4.	Panic Devices:	40-5/16 inches

D. Conform to ANSI A117.1 for positioning requirements for the handicapped.

3.03 SCHEDULE

A. See Drawings, Door Schedule, and Hardware Groups.

END OF SECTION

SECTION 09260

GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Stud wall framing.

B. Gypsum board.

C. Taped and sanded joint treatment.

1.02 RELATED WORK

D. Section 06112 - Framing and Sheathing

B. Section 08111 - Standard Steel Door Frames.

1.03 REFERENCES

A. ANSI/ASTM C36 - Gypsum Wallboard.

B. ANSI/ASTM C475 - Joint Treatment Materials for Gypsum Wallboard Construction.

C. ANSI/ASTM C754 - Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.

D. GA-201 - Gypsum Board for Walls and Ceilings.

E. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

1.04 QUALITY ASSURANCE

A. Applicator: Company specializing in gypsum board systems work with three years experience.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - GYPSUM BOARD SYSTEM

A. U. S. Gypsum Co.

B. Other acceptable manufacturers offering equivalent products:
1. Georgia Pacific.
2. National Gypsum.

C. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 FRAMING MATERIALS

A. Studs: Wood; structural grade. See Section 06112.

B. Fasteners: ANSI/ASTM C646.

2.03 GYPSUM BOARD MATERIALS

A. Standard Gypsum Board: ANSI/ASTM C36; 5/8 inch thick, maximum permissible length; ends

square cut, tapered edges.

B. Fire Rated Gypsum Board: ANSI/ASTM C36; fire resistive type, UL rated; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges. Ceilings and walls down to top of ceramic tile.

2.04 ACCESSORIES

A. Corner Beads: Metal.

B. Edge Trim: GA 201 and GA 216 bead.

C. Joint Materials: ANSI/ASTM C475; reinforcing tape, joint compound, adhesive, water, and fasteners.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on drawings.

B. Beginning of installation means acceptance of existing surfaces and substrate.

3.02 FRAMING INSTALLATION

A. Install studding in accordance with ANSI/ASTM C754.

B. Stud Spacing: 16 inches on center.

C. Partition Heights: Varies above finished floors.

D. Door Opening Framing: Install double studs at door frame jambs. Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.

E. Blocking: Bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, and hardware. Wood which is in contact with concrete is to be treated.

F. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

3.03 GYPSUM BOARD INSTALLATION

A. Install gypsum board in accordance with manufacturer's instructions.

B. Erect single layer fire rated gypsum board horizontally (long dimension at right angles to framing members) with edges and ends occurring over firm bearing on both walls and ceilings.

C. Use screws when fastening gypsum board to metal furring or ceiling framing and metal studs.

D. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials as indicated.

3.04 JOINT TREATMENT

A. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

B. Feather coats onto adjoining surfaces so that camber is maximum 1/16 inch.

3.05 TOLERANCES

A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09511

SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Suspended metal grid ceiling system and seismic bracing.

B. Acoustical tile.

C. Non-fire rated assembly.

D. Perimeter trim.

1.02 RELATED WORK

A. Section 15800 - Air Handling: Air diffusion devices in ceiling system.

B. Section 16100 - Electrical: Basic Materials and Methods: Light fixtures in ceiling system.

1.03 REFERENCES

A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings

B. ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

1.04 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacture of ceiling suspension system and ceiling tile with three years minimum experience.

B. Installer: Company with three years minimum experience.

1.05 REGULATORY REQUIREMENTS

A. Conform to International Building Code for suspension, materials, and seismic bracing requirements.

1.06 SUBMITTALS

A. Submit product data under provisions of GENERAL CONDITIONS.

B. Provide product data on metal grid system components, acoustic units, and ratings.

C. Submit samples under provisions of GENERAL CONDITIONS.

D. Submit two samples 12" x 12" in size, illustrating material and finish of acoustic units.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F and humidity of 20 to 40 percent prior to, during, and after installation.

1.08 SEQUENCING/SCHEDULING

A. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust generating

activities have terminated, and overhead work is completed, tested, and approved.

B. Schedule installation of acoustic units after interior wet work is dry.

1.09 EXTRA STOCK

A. Provide (2) boxes or cartons of extra acoustic units to Owner at completion.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - SUSPENSION SYSTEM

A. Armstrong.

B. U. S. Gypsum.

C. Donn.

D. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 SUSPENSION SYSTEM MATERIALS

A. Grid: ASTM C635, intermediate duty, non-fire rated exposed T; components die cut and interlocking, white in Hallway #100a and black in Simulator Rooms #113, #114, and #115.

B. Accessories: Stabilizer bars, clips, splices and edge moldings required for suspended grid system and seismic bracing requirements.

C. Grid Materials: Commercial quality cold rolled steel with galvanized coating.

D. Support Channels and Hangers: Galvanized steel; size and type to suit application, to rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

2.03 ACCEPTABLE MANUFACTURERS - ACOUSTIC UNITS

A. U. S. Gypsum Style: Non-directional, Glacier - Tegular Panels

B. Substitutions: Under provisions of GENERAL CONDITIONS.

C. Acoustic Materials:
1. Size: 24 x 48 inches.
2. Thickness: 5/8 inches.
3. Composition: Mineral.
4. Density: 1.02 lb/cu ft.
5. Light Reflectance: LR-1 percent.
6. NRC Range: .60 to .70.
7. STC Range: 25 to 29.
8. Edge: Square cut.
9. Surface Color: White in Hallway #100a and black in rooms #113, #114, and #115.
10. Surface Finish: Non-directional.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that existing conditions are ready to receive work.

B. Verify that layout of hangers will not interfere with other work.

C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install system in accordance with ASTM C636, manufacturer's instructions, as supplemented in this Section, and I. B. C. for seismic Zone #3.

B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.

C. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.

D. Hang system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Locate system on room axis according to reflected plan.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner; or support components independently.

H. Do not eccentrically load system, or produce rotation of runners.

I. Install edge molding at intersection of ceiling and vertical surfaces and rout edge to set down into recess, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.

J. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.

K. Install acoustic units level, in uniform plane, and free from twist, warp and dents.

3.03 TOLERANCES

A. Variation from Flat and Level Surface: 1/8 inch in 10 ft.

B. Variation from Plumb of Grid Members Caused by Eccentric Loads: Two degrees maximum.

END OF SECTION

SECTION 09650

RESILIENT BASE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient base.

1.02 REFERENCES

A. ASTM E84 - Surface Burning Characteristics of Building Materials.

B. FS SS-W-40 - Wall Base: Rubber.

1.03 REGULATORY REQUIREMENTS

A. Conform to State and I. B. C. for flame/fuel/smoke rating requirements.

1.04 SUBMITTALS

A. Submit shop drawings and product data under provisions of GENERAL CONDITIONS.

B. Provide product data on specified products, describing physical and performance characteristics, sizes, patterns and colors available.

C. Submit samples under provisions of GENERAL CONDITIONS.

D. Submit two 4-inch long samples of base material for each color specified.

E. Submit manufacturer's installation instructions.

1.05 OPERATION AND MAINTENANCE DATA

A. Submit cleaning and maintenance data under provisions of GENERAL CONDITIONS.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.

B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during, and 24 hours after installation of materials.

1.07 EXTRA MATERIALS

A. Provide 8 lineal feet of base of each color.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - BASE MATERIALS

A. Flexcove.

B. Roppe.

C. Armstrong.

D. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 BASE MATERIALS

A. Base: FS SS-W-40, Type I rubber, 4 inch high; 1/8 inch thick; top set coved; premolded external corners.

B. Base Accessories: Premolded end stops and external corners, of same material, size, and color as base.

PART 3 EXECUTION

3.01 EXAMINATION

A. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 INSTALLATION - BASE MATERIAL

A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends use premolded units.

C. Install base on solid backing. Bond tight to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.03 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

END OF SECTION

SECTION 09688

CARPET-GLUE DOWN

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpeting glue down method.

1.02 REFERENCES

A. ANSI/ASTM E648 - Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

B. ASTM E84 - Surface Burning Characteristics of Building Materials.

C. FS DDD-C-95 - Carpets and Rugs, Wool, Nylon, Acrylic, Modacrylic.

D. FS DDD-C-0095 - Carpet and Rugs, Wool, Nylon, Acrylic, Modacrylic, Polyester, Polypropylene.

E. FS DDD-C-1559 - Carpet, Loop, Low Pile Height, High Density, Woven or Tufted with Attached Cushioning.

1.03 SUBMITTALS

A. Submit shop drawings and product data under provisions of GENERAL CONDITIONS.

B. Indicate seaming plan, method of joining seams, direction of carpet.

C. Provide product data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

D. Submit samples under provisions of GENERAL CONDITIONS.

E. Submit two samples 12 x 12 inch in size illustrating color and pattern for each carpet material specified.

F. Submit manufacturer’s installation instructions under provisions of GENERAL CONDITIONS.

1.04 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of GENERAL CONDITIONS.

B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning and shampooing.

1.05 QUALITY ASSURANCE

A. Manufacturer: State contract carpet (Wall 2 Wall, locate contractor/supplier) specializing in tufted carpet.

B. Installer: Wall 2 Wall, Salt Lake City, Utah (801-288-2694).

1.06 REGULATORY REQUIREMENTS

A. Conform to IBC code for carpet flamability requirements and anti-static.

B. Conform to ANSI/ASTM E648.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.

B. Maintain minimum 70 degrees F. ambient temperature three days prior to, during, and 24 hours after installation of materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Biglow (New Basics 26) Broadloom.

2.02 MATERIALS

A. Carpet: Type Olefin, Class Tufted.
   1. Gauge -1/10
   2. Pile Weight - 26.0 oz.
   3. Pile Thickness - 137 in.
   4. Solution dyed.
   5. Anti-static (static free).

B. Tufted Carpet: Conforming to Utah State contract carpet criteria.

2.03 ACCESSORIES

A. Sub-floor Filler: White premix latex; type recommended by carpet manufacturer.

B. Primers and Adhesives: Waterproof; of types recommended by carpet manufacturer.

C. Edge Strips: Metal type, aluminum finish.

D. Base Gripper: As recommended by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are smooth and flat with maximum variation of 1/8 inch in 10 feet and are ready to receive work.

B. Verify concrete floors are dry to a maximum moisture content of 7 percent and exhibit negative alkalinity, carbonization, or dusting.

C. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 PREPARATION

A. Remove floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to leave smooth, flat, hard surface.

C. Prohibit traffic until filler is cured.

D. Vacuum floor surface.

3.03 INSTALLATION

A. Apply carpet and adhesive in accordance with manufacturer’s instructions.

B. Lay out rolls of carpet for approval.

C. Verify carpet match before cutting to ensure minimal variation between dye lots.

D. Double cut carpet to allow intended seam and pattern match. Make cuts straight, true, and unfrayed. Edge seam carpet at all areas.

E. Locate seams in area of least traffic.

F. Fit seams straight, not crowded or peaked, free of gaps.

G. Lay carpet on floors with run of pile in same direction as anticipated traffic.

H. Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change of color or pattern between rooms under door centerline.

I. Cut and fit carpet around interruptions.

J. Fit carpet tight to intersection with vertical surfaces without gaps.

3.04 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean and vacuum carpet surfaces.

3.05 PROTECTION

A. Prohibit traffic from carpet areas for 24 hours after installation.

END OF SECTION

SECTION 09900

PAINTING

PART 1 GENERAL

1.01 WORK INCLUDED

A. Surface preparation.

B. Surface finish schedule.

C. Color selection schedule furnished by Architect or Owner.

1.02 RELATED WORK

A. Section 05120 - Miscellaneous Steel and 08111 - Standard Door Frames: Shop primed items.

1.03 REFERENCES

A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Laquer, and Related Products.

B. ASTM D2016 - Test Method for Moisture Content of Wood.

1.04 DEFINITIONS

A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

1.05 QUALITY ASSURANCE

A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with three years experience.

B. Applicator: Company specializing in commercial painting and finishing with three years experience.

1.06 REGULATORY REQUIREMENTS

A. Conform to local code for flame/fuel/smoke rating requirements for finishes.

1.07 SUBMITTALS

A. Submit product data under provisions of GENERAL CONDITIONS.

B. Provide product data on all finishing products.

C. Submit samples for color and product approval prior to commencing work.

D. Submit two samples 2 X 2 inch in size illustrating range of colors available for each surface finishing product scheduled, for selection.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of GENERAL CONDITIONS.

B. Store and protect products under provisions of GENERAL CONDITIONS.

C. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.

D. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

E. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area, unless required otherwise by manufacturer's instructions.

F. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

B. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

C. Minimum Application Temperature for Varnish and Enamel Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.

D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.10 EXTRA STOCK

A. Provide a one gallon container of each color to Owner.

B. Label each container with color, and room locations, in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - PAINT & VARNISH

A.	Kwal-Howell	Product: Latex and Enamel
B.	Pratt & Lambert	Product: Latex and Enamel
C.	Benjamin Moore	Product: Latex and Enamel

D. Substitutions: Under provisions of GENERAL CONDITIONS.

2.02 ACCEPTABLE MANUFACTURERS - PRIMER-SEALERS

A. Same as Paint Manufacturers

2.03 MATERIALS

A. Coatings: Ready mix all paint items. Process pigments to a soft paste consistancy, capable of being readily and uniformly dispersed to a homogeneous coating.

B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.

C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.04 FINISHES

A. Refer to schedule at end of Section for surface finish and color schedule on Drawings.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Interior Located Wood: 15 percent, measured in accordance with ASTM D2016.
   3. Concrete Floors and Concrete Block: 12 percent.

D. Beginning of installation means acceptance of existing surfaces and substrate.

3.02 PREPARATION

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.

B. Correct minor defects and clean surfaces which affect work of this Section.

C. Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

F. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.

G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

H. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

J. Interior Wood Items Scheduled to Receive Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

K. Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.03 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Remove empty paint containers from site daily.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish.

D. Apply each coat of paint slightly darker than preceeding coat unless otherwise approved.

E. Sand lightly between coats to achieve required finish.

F. Allow applied coat to dry before next coat is applied.

G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Prime back surfaces of interior and exterior woodwork with primer paints.

I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with glass varnish reduced 25 percent with mineral spirits.

3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Paint shop primed equipment.

B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

C. Replace identification markings on mechanical or electrical equipment when painted accidently.

D. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

E. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.

3.06 CLEANING

A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.

B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.07 SCHEDULE - INTERIOR SURFACES

A. Wood - Painted
   1. One coat alkyd prime sealer.
   2. Two coats alkyd enamel, eggshell.

B. Steel - Primed
   1. Touch-up with original primer.
   2. Two coats alkyd enamel, semi-gloss.

C. Existing Painted Surfaces
   1. Two coats acrylic enamel, eggshell

D. New Gypsum Board
   1. One coat acrylic primer sealer.
   2. Two coats acrylic enamel, eggshell.

3.08 SCHEDULE - COLORS

A. To be scheduled by Architect at a later date.

END OF SECTION

DIVISION 15 - MECHANICAL

SECTION 15010 GENERAL REQUIREMENTS

1.01 GENERAL AND SPECIAL CONDITIONS

The General and Special conditions are hereby made a part of this Division.

1.02 SCOPE

This work consists of, but is not limited to, the furnishing of all plant, labor, materials and equipment in connection with the installation of a complete plumbing system as shown on the drawings, herein specified, or both as follows:

General Mechanical Requirements - Section 15010
Mechanical Insulation - Section 15250
Heating & Air Conditioning - Section 15600

1.03 DRAWINGS AND SPECIFICATIONS

The plans and specifications are to be taken as an integral unit and items called for on one and not the other shall be furnished and installed as though shown and called for in both.

1.04 ORDINANCES AND CODES

The work shall be installed in accordance with the Local, State and any other government code or ordinance that governs the type of work covered by these specifications. Work shall be in accordance with "International Plumbing Code", "International Mechanical Code" and U.L..

1.05 FEES AND PERMITS

No fees or permits are required.

1.06 WORKMANSHIP

Workmanship shall be the best quality of its kind for the respective industries, trades, crafts and practices and shall be acceptable in every respect to the Architect. Nothing contained herein shall relieve the Contractor from making good and perfect work in all details of the construction.

1.07 SUBSTITUTIONS

The procedure for request and approval of substitute materials, as outlined in the General Conditions, shall be strictly adhered to.

1.08 SCHEDULES OF MATERIAL AND EQUIPMENT

As soon as practicable, and within thirty (30) days after date of award of Contract and before commencement of work, a complete schedule of equipment and materials proposed for installation shall be submitted to the Architect by the Contractor for the Architect's approval or rejection. The schedules shall include catalogs, cuts, drawings and such other descriptive data or samples that are requested by the Architect. Five copies shall be submitted.

1.09 REMOVAL OF DEBRIS

Upon completion of this Division of work, remove all surplus materials and rubbish. Clean all spots resulting from this work from hardware, floors, glass, walls, etc. Do all required patching, repair all work of other trades damaged by this division of work and leave the premises in a clean, orderly condition.

1.10 CUTTING AND PATCHING

Any cutting, patching or filling necessary for the proper execution of this work shall be done by the Contractor. Where holes or recesses must be cut in walls, floors or ceilings, or any other part of the building, it shall be done by a competent workman in a neat and workmanlike manner. No rough or unsightly work will be allowed and cutting of the structural members shall be done only on approval of the Architect.

1.11 PIPE SLEEVES AND COLLARS

All pipes passing through floors, beams or wall are to be fitted with galvanized iron sleeves two (2) sizes larger than pipe passing through them. These sleeves are to be cast in the concrete or brick unless openings have been provided in precast concrete members.

1.12 FLOOR AND WALL PLATES

Where uninsulated pipes pass through floor, ceilings or partitions in the finished part of the building, chromium plates shall be provided on all pipe work.

1.13 PIPE LOCATION, ARRANGEMENT AND INSTALLATION

All hot and cold water pipe shall run overhead wherever possible or as noted on the drawings.

Where water pipe runs underground, it shall be Type "K" copper.

All piping throughout the building is to be arranged to permit free expansion and contraction without injury to pipe or connections.

All pipe shall be reamed at the ends and free of all inside scale or burrs.

Threads shall be cut clean and sharp and to a length equal to one and one-eight (1-1/8) the length of the female thread receiving the pipe. The pipe shall be screwed in the full length of the female thread.

Pipe shall be made tight with thread lubricant worked into male thread only. Surplus material shall be wiped off and the joint left neat and clean. Lubricant shall be powdered graphite and linseed oil or plumbago and linseed oil.

All suspended piping shall be securely supported from the floor to ceiling at not more than ten foot (10') centers for two inches (2) and above and six foot (6') centers for one and one half inches (1-1/2") and below.

Hangers shall be malleable iron split ring adjustable type suspended by wrought iron rods proportional to the size of the pipe. Rods shall be suspended from the concrete inserts designed to set in place on the forms for concrete or form joints. Plumber's tape, chain or wire will not be permitted.

Outside pipe placed underground shall be buried three feet (3') minimum to protect against freezing or as noted on drawings.

Horizontal runs shall be graded 1/4" per foot or as shown on drawings.

1.14 VALVES

The valves are to be installed with stem above the horizontal unless otherwise shown.

Unless otherwise shown, all valves are to be globe valves.

Valves located outside the building shall be installed in cast iron curb boxes with cast iron cover.

Valves shall be Jenkins, Crane or Walworth.

Access panels shall be provided for all valves, etc., where necessary to perform necessary repair or adjustments. Size shall be as required to perform work.

1.15 FLASHING

All pipes passing through the roof shall be neatly flashed and counter-flashed with water tight #4 pound sheet lead or sixteen (16) ounce copper flashing, fitting snugly around the pipes and secured to pipe with mechanical pipe clamp. The flange around the base shall be at least sixteen inches (16) square.

1.16 ELECTRICAL WIRING

This Contractor is to furnish and set all motors that pertain to this division of the specifications, but all power wiring and disconnects will be furnished and installed by the Electrical Contractor.

Exceptions for furnishing of starters by the Electrical Contractor will be in those pieces of equipment where the starter is incorporated into package units. See individual equipment descriptions in specifications for those exceptions.

1.17 TESTS AND ADJUSTMENTS

Upon the completion of the job, make all necessary adjustments to the system

Following these adjustments, run tests as in actual services, of at least eight (8) hours duration during which all systems equipment shall function properly and to the satisfaction of the Owner.

Before any piping is covered, tests shall be made in presence of the Architect and any leaks or defective work corrected. No caulking or threaded work will be permitted. Waste and vent system shall be filled to the roof level with water and show no leaks for a period of one (1) hour. Like wise, the water supply system shall be subjected to the 100 psi pressure for four (4) hours and shall show no leaks..

The Contractor shall remove all stains or grease marks on walls, or elsewhere, caused by his workman or for which he is responsible. He shall also remove all stickers on fixtures, adjust all flush valves, pressure reducing valves, etc., and shall leave the premises in first class order.

1.18 GREASING AND OILING

Prior to placing the equipment in operation, the bearings on all motors, etc., shall be properly lubricated with a lubricant suitable for the service.

If the instructions are on bearings or equipment, the lubricant specified shall be used and instructions left on the equipment for the Owner's future use.

1.19 PAINTING

All equipment furnished in finished painted condition by the Contractor shall be left without mark or scratch.. Any necessary refinishing to match original shall be done. Do not paint over name plates, motors or serial numbers.

1.20 OPERATING INSTRUCTIONS AND CATALOG INFORMATION

The Contractor shall provide to Owner two copies of complete operating and maintenance instructions. A blueprint showing the operations of the control system shall be included in the above.

The Contractor shall compile in a loose leaf binder a catalog of every product used by him in the completion of the Contract, including all valves and specialties. At the completion of the work and before final acceptance by the Architect, he shall turn over to the Owner this compilation of catalog data. A double index shall be provided, one giving an alphabetical list of products for which catalogs are included and one giving and alphabetical list of all manufacturer's representatives, together with their addresses, whose products are included in the work.

1.21 GUARANTEE

The Contractor shall guarantee the system for a period of one (1) year from date of final acceptance.

Make, free of charge, any repairs necessary due to defective workmanship or materials that may show during

a period of one (1) year.

The Contractor's system shall be free from all noise in operation that may develop as the result of failure to construct the system in a workmanlike manner and in strict accordance with the drawings and these specifications.

END OF SECTION

SECTION 15250 - MECHANICAL INSULATION

PART 1-GENERAL

1.01 SUPPLEMENTAL

The General Provisions of the Contract, including General and Supplementary Conditions and the General Requirements apply to the work specified in this section.

Requirements of Section 15010 apply to this section.

1.02 SCOPE OF WORK

The work shall include all labor, materials, equipment, accessories, transportation and services included in installing the mechanical insulation as outlined below.

Duct insulation

1.03 QUALIFICATION OF WORKMAN

Contractor shall use sufficient insulators and supervisors in the execution of this portion of the work to insure the proper and adequate installation of the insulation throughout the work.

1.04 COMPLIANCE WITH SPECIFICATIONS

Whenever required by the Architect or Engineer during the progress of the work, the Contractor shall furnish proof that the insulation installed equals or exceeds all requirements of the specifications.

1.05 FIRE HAZARD CLASSIFICATIONS

Pipe and duct insulation shall be tested in accordance with the requirements of U.L. "Pipe and Equipment Covering R5583 400 8.15" and ASTM E-84 Steiner Tunnel Test.

Maximum fire hazard classification of the composite insulation construction as installed shall be not less than:

Flame spread:	25
Fuel Contribution:	50
Smoke Development:	50

PART 2-PRODUCT

2.01 MATERIAL

The insulation products used on each system shall be of one manufacturer, unless specifically excepted. All insulation methods and material shall be compatible with the manufacturer's recommendations.

Approved Manufacturer: Owens-Corning Fiberglass, Johns Mansville
Certain-Teed, or prior approved equal

PART 3-EXECUTION

3.01 INSULATION

Prior to application of insulation of insulating material, surfaces to be insulated shall be clean and dry.

Insulation shall be installed to facilitate removal for making repairs. Insulation sections or blocks shall be placed so the least possible damage to insulation will result from inspection or repair of piping or equipment

to which it is applied.

All joints shall be firmly butted together. Longitudinal laps shall be sealed with lap adhesive or vapor seal mastic. Butt joints shall be wrapped with 4" strip or pressure sensitive coated joint sealing strips.

Every effort shall be made to make the vapor barrier continuous.

All exposed ends of fiberglass insulation shall be coated with an approved material and made water tight.

All penetrations through fire separations shall be caulked with 3M "Fire Barrier".

3.02 TESTING AND APPROVAL

All insulation shall be applied strictly in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 15600 - HEATING AND AIR CONDITIONING

1.01 GENERAL AND SPECIAL CONDITIONS:

The General and Special conditions and the General Mechanical Requirements are a part of this section insofar as they shall apply.

1.02 SCOPE:

This section shall include complete installation of the following for new addition:

A complete new heating and cooling system.
A complete air distribution system.
A complete system of temperature control.

1.03 MATERIALS:

Ductwork shall be galvanized steel.

Flues shall be Metalbestos type “B” with Breidert type “L” cap.

Refrigerant piping shall be Type “L” copper, degreased and deoxidized with wrought copper fittings and “Silfos” silver solder. Underground pipe shall run in split tile wired closed and sealed with tar.

Flexible ductwork shall have 1" fiberglass insulation with vapor barrier equal to Genflex with a maximum length at diffuser of 2'-0".

1.04 STANDARDS:

The construction of all ductwork, including gauges, of metal bracing layout, etc;., shall be in accordance with the following manuals of the Sheet Metal and Air Conditioning Contractor National Associates, Inc., unless otherwise noted.

Low velocity ductwork and plenums shall be in accordance with SMACNA "Low Velocity Duct Manual", Third Edition.

Round ductwork shall be spiral wound in accordance with SMACNA “High Velocity Duct Manual”.

1.05 INTERIOR DUCT INSULATION:

Supply and return air ductwork from the furnaces for a distance of 10'-0" and all outside air ducts shall have 1" of interior duct insulation. Duct dimensions shown are net inside dimensions and duct shall be increased 2" on a side to accommodate insulation. Insulation shall be 1.5 # density. Insulation materials, adhesives, coatings, and other accessories shall have surface burning characteristics as determined by ASTM E 84 not to exceed 25 for flame spread and 50 for smoke developed flameproofing treatments subject to deterioration due to the effect of moisture or high humidity are not acceptable.

Install mat finish surface on air stream side. Secure insulation to cleaned sheet metal duct with a continuous 100% coat of adhesive and with mechanical fasteners spaced per SMACNA recommendations. Pin all duct liner.

Accurately cut liner and thoroughly coat exposed edges of duct liner, including diffuser drop cut-outs with adhesive to seal fibers. Butt joints tightly. Top and bottom sections of insulation shall overlap sides.

1.06 ELBOWS:

Elbows shall be made with radius to the center of the elbow at least 1.5 times the duct width parallel to the radius, or double thickness turning vanes, installed.

1.07 EXTRACTORS AND SPLITTER DAMPERS:

Extractors shall be provided ahead of each sidewall register inside of duct and where shown on the drawings. Extractors shall be adjustable with manual adjustable lever. Operator to be complete with locking quadrant and shall be located so as to be readily accessible. Extended shafts with bearing plates and operators shall be installed where adjustment arm is not readily accessible from face of register. Extended arms and/or miter gears shall be installed where operator on duct is not readily accessible. Coverplates in finished areas shall be chrome plated.

Splitter damper shall be installed where shown and at all take-offs as required. Controls including operator and accessories shall be the same as for extractors.

1.08 VOLUME DAMPERS:

Furnish and install in each duct where called for on the drawings in low pressure ductwork American Foundry and Furnace Co. type F-18 or equal by Air conditioning Products, multiblade proportioning volume dampers with opposed blade linkage and shaft extended thru the frame. An indicating lock quadrant shall be installed on the shaft.

1.09 REGISTERS, DIFFUSERS AND GRILLES:

Furnish and install registers, diffusers and grilles of size shown on the drawings and described herein. All grilles and registers, complete with a frame with rubber gasket suitable for the area and wall construction shall be installed where shown on the drawings. All registers shall be complete with a key-operated opposed damper integral with the grille.

Finish for all registers, diffusers, grilles, etc., shall be as selected by the Architect or as noted herein. All data to be certified and all tests performed in accordance with requirements of the Air Diffusion Council. For convenience and to establish quality and function, Manufacturers and their model numbers are used herein and on drawings. Items shall be Carnes, Titus, Tuttle & Bailey, Krueger, Agitair or as noted.

Registers, grilles and diffusers where not specifically noted otherwise:

> Ceiling supply diffusers shall be Tuttle & Bailey Type "ME" for gypsum board ceilings and Type “M” with 24" x 24" face for lay-in ceilings..

1.102 OUTSIDE AIR LOUVERS:

Furnish and install fixed, stormproof, formed metal louvers with flanged frame and 1/4" mesh screen behind louvers.

Louvers shall be 4" deep, 18 gauge galvanized steel prime coated and ready for painting.

Louvers shall be Louvers and Dampers EL-101T or equal of Dowco or Affco.

1.11 CEILING EXHAUST FAN:

Ceiling type exhaust fans shall have centrifugal blower, backdraft dampers, chrome intake grilles and shall be complete with exhaust duct and roof cap. Fans shall be quiet in operation and shall have acoustical sound treatment. Fans shall be Penn, Jenn, Pryne, or equal.

1.12 FURNACE:

Furnace to be high efficiency 90% plus efficiency gas fired, upflow, complete with heat exchanger, dx coil, blower, filter, casing, gas train, and all operating and safety controls. Capacities shall be as shown on drawing. PVC intake and vents with termination cups shall be provided with unit. A drain shall run to floor drain and sump.

All unit exterior panels shall be constructed of galvanized steel, bonderized, and coated with baked enamel.

Fan shall be of forward curved centrifugal Class I type, belt drive.

Unit heat exchangers shall be 20 gauge chromized, stainless steel with stainless steel slotted port, Bunson type burners for natural gas. Plots shall have automatic solid state spark ignition. Gas valves shall provide two-stage control. Gas pressure reducing valve suitable for inlet pressure shall be included. Heat exchanger shall have 10 year warranty.

Heating systems shall include fan protected by centrifugal switches, heat limit switches, time delay relay, flame rollout switches and pilot sensors.

Unit connections main power wires to unit shall be routed to single-oint terminal connections. Single gas connection shall supply gas valves.

Thermostat assembly shall provide staged 7-day programmable heating-cooling type with remote sensing element.

Refrigerant coils shall be constructed of aluminum plate fins bonded to copper tube. Drain pan shall be insulated and shall be complete with drain connection.

Filters shall have 36.5% efficiency (NBS Dust Spot Dust) and shall be replaceable type. Extra set of filters shall be provided to be installed the day before opening day.

Unit shall be Bryant or equal of Carrier or Trane.

1.13 CONDENSING UNIT:

Furnish and install an air cooled condensing unit of size and capacity shown on drawings. Unit shall be complete with coils, compressor, propeller fan, casing, fan guard, wiring, and controls.

All unit exterior panels shall be constructed of galvanized steel, bonderized and coated with baked enamel.

Condenser coils shall be constructed of aluminum plate fins mechanically bonded to copper tubes.

Fans and motors: Fans shall be of the propeller direct drive.

Units shall be mounted on curb on concrete pad.

Units shall be Bryant or equal of Carrier or Trane.

1.14 AIR BALANCE:

Balance equipment, air damper, diffuser and registers so that all rooms or areas are supplied with or have exhausted from them their proper proportion of air to the entire satisfaction of the Architect and the Owner. Submit two (2) copies of typewritten report giving results of the final balancing.

The balancing contractor shall make any necessary changes in balancing as are requested by Architect in air quantities or direction of blow to prevent disturbance where applicable.

1.15 AUTOMATIC TEMPERATURE CONTROL:

This Contractor shall furnish all labor and materials for a complete electrical temperature control system.

Thermostats shall be furnished and mounted by this Contractor and shall be wired by the Mechanical Contractor. All thermostats shall have locking adjustments and shall be mounted at 5'-6". Thermostats shall be mounted for wiring to run concealed.

The complete system shall be installed and guaranteed against defects in material and workmanship for a period of one (1) year from date of acceptance,

Upon completion of the project this contractor's representative shall spend the necessary time with the building's operating personnel to instruct them on the operation of this system. The services shall be performed without

cost to the Owner.

Sequence of control

Furnace-Condensing Units

A wall mounted 7-day programmable thermostat shall control space temperature.

A motorized damper in outside air duct to each furnace shall open when the furnace is operating in the occupied mode to allow outside air. Motorized damper shall be closed on night or unoccupied mode.

END OF SECTION

SECTION 16000
GENERAL PROVISIONS, ELECTRICAL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections apply to work of this section.

1.02 STANDARDS

A. The following industry standards are considered minimum requirements and are made a part of the contract documents:
   1. National Electrical Code, latest Edition (NEC)
   2. Rules and Regulations of the National Board of Fire Underwriters
   3. Underwriters Laboratories (UL)
   4. Electrical Ordinances of Local Governing Authority
   5. Utah State Fire Marshal's Rules and Regulations
   6. International Building Code
   7. Regulations of American Standards Association
   8. National Electrical Manufacturer's Association (NEMA)
   9. American National Standards Institute (ANSI)

B. If any conflict occurs between these rules and the contract documents or between the plans and specifications, notify the Architect promptly in writing. Do not proceed with any work in conflict until a solution is approved in writing by the Architect.

1.03 WORKMANSHIP

A. All workers doing electrical work of any nature on this project must be licensed with the State of Utah and shall show their license upon request of the Owner, Architect, and/or their representatives.

1.04 WORK INCLUDED

A. The basic contract work includes all labor, material, tools, transportation, equipment, and superintendence specified, indicated on the drawings, or necessary to make a complete installation of, but not limited to, the following:
   1. Installation of all appliances, apparatus and materials not specifically noted on drawings and/or mentioned herein, but which are necessary to make a complete working installation of all electrical systems required for this project.
   2. All hangers, anchors, sleeves, chases, supports and fittings as may be required and as indicated.
   3. Complete electric service with service conduits, service conductors, distribution system, branch panels and branch circuits for power and lighting with raceway system and outlet boxes.
   4. All luminaries, wall switches, receptacles, etc., as indicated on drawings.
   5. Exterior building lighting and controls.
   6. Telephone outlets and raceway system, ready for installation of wires by others.
   7. Electrical service to heating, ventilating, and air conditioning equipment.

1.05 SUBSTITUTIONS

A. Material or products specified by name of manufacturer, brand, or trade name or catalogue reference will be the basis of the bid and furnished under the contract unless changed in writing by the Architect. Where two or more materials are named, the choice of these will be optional with the Contractor.

B. Submit requests for substitution in writing to the Architect with copy to the Engineer including

descriptive material or products not less than four (4) working days prior to bid opening. Refer to General Conditions.

1.06 ACCURACY OF DATA

A Given herein and on the drawings are as exact as could be secured, but their absolute accuracy is not guaranteed. Specifications and drawings are for the assistance and guidance of the Contractor.

B. Electrical drawings are diagrammatic, but will be followed as closely as actual building construction and work of other contractors will permit. All deviations from the drawings required to make the work of the Electrical Contractor conform to the building as constructed and to the work of other contractors will be made by the Electrical Contractor with approval of the Architect.

1.07 TEMPORARY POWER

A. Provide temporary power for reasonable convenience during construction of building. Coordinate payment for power consumption with the Owner and General Contractor.

1.08 INSPECTIONS

A. Notify the General Contractor in writing, giving ample notice, and the General Contractor will notify the Owner in writing, giving ample notice, at the following stages of construction.
1. When underfloor work is complete and before concrete slabs are poured.
2. When all rough-in is complete but not covered.
3. Final at completion of all electrical work.

1.09 VISIT THE SITE

A. Contractors are assumed to have visited the site and thoroughly acquainted themselves with conditions affecting the proposed work. Verify existing conditions and measurements at the building before beginning work.

1.10 SERVICE AND GUARANTEE

A. The system specified herein shall be free from defects in workmanship and material under normal use and service. If, within twelve months from date of acceptance by the Architect and/or Owner, any of the equipment herein described is proven to be defective in workmanship or material, it will be adjusted, repaired, or replaced free of charge by the Electrical Contractor.

B. Provide Owner with manufacturer's warranty for all equipment which the manufacturer normally provides warranties in excess of twelve months.

C. Furnish two prints of as-built drawings. See General Conditions.
1. Indicate all changes made to the drawings such as changes in fixture and outlet locations, changes in circuit routing and circuit numbering, etc. Include all changes by Addenda, Change Order, Supplemental Instruction or Verbal Instruction.

D. Furnish two sets of Operation and Maintenance Manuals, bound in three-ring loose leaf binders to the Owner.

PART 2 PRODUCTS

2.01 MATERIALS

A. All materials furnished and installed under this Section, for which U.L. Standards have been established, will be listed by and bear the label of Underwriters Laboratories, Inc.

B. All materials will be new and standard products of the manufacturer. Similar items will be of the same manufacturer.

2.02 CUTTING AND REPAIRING

A. The Electrical Contractor is responsible for all required digging, cutting, etc., incidental to work under the Electrical Contract. Make required repairs thereafter to the satisfaction of the Architect.

B. Do not cut into any major structural element, beam or column, without written approval of the Architect.

C. In order to avoid unnecessary cutting of the construction, arrange the electrical work so as to have it proceed with other trades.

D. Perform all excavating, trenching, and backfill required for electrical work in accordance with Division 2 Specifications.

2.03 SHOP DRAWINGS

A. As soon as possible, but not more than 30 days after contract award, submit six (6) sets of shop drawings for review. Submit shop drawings in three-ring looseleaf binder.

B. Include catalogue cuts and descriptive literature for the following items:
1. Lighting Fixtures
2. Panelboards
3. Motor Starters Controls
4. Wiring Devices

C. Above list is considered minimum. Additional items may be required to be submitted for review.

PART 3 EXECUTION

3.01 INSTALLATION

A. Installation of materials will comply with all codes and be accomplished with good workmanship in the judgment of the Architect and Engineer.

3.02 MATERIAL HANDLING

A. Use all means necessary to protect electrical system materials before, during, and after installation and to protect the installed work and materials of all other trades.

B. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

3.03 CLEAN UP

A. As the work progresses, remove from the building, the premises, and surrounding streets, alleys, etc., all rubbish and debris resulting from the work. Leave all lighting fixtures and other equipment and materials absolutely clean and ready for use.

3.04 COOPERATION WITH OTHER CONTRACTORS

A. Cooperate with other contractors doing work on the building as may be necessary for the proper execution of the work of various trades employed in construction of the building.

B. Refer to architectural, structural, and mechanical drawings for construction details and coordinate electrical work with that of other contractors to the end that unnecessary delays will be avoided.

3.05 TESTS

A. Upon the completion of the work and adjustment of all equipment, test all systems in the presence of

the Architect's Engineer to demonstrate that all equipment furnished, installed, and/or connected under the provisions of these specifications functions electrically in the manner required.

B. Test all systems for short circuits and ground faults, proper neutral connections and mechanical and electrical defects.

END OF SECTION

SECTION 16110
RACEWAYS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Furnish and install complete raceway system for all wiring as shown on drawings and as specified herein.

PART 2 PRODUCTS

2.01 RACEWAYS

A. Minimum 3/4" trade diameter for all raceways.

B. Use Electrical Metallic Tubing (EMT), galvanized inside and out, except where raceways are installed in earth or in concrete in contact with earth.

C. Use Schedule 40 PVC electrical conduit in earth or in concrete in contact with earth. Furnish and install a separate ground wire in all PVC conduits. Use Galvanized Rigid Steel Conduit (GRC) for all bends greater than 22 degrees in PVC conduit runs.

D. Use Galvanized Rigid Steel Conduit (GRC) for conduit penetrations through floor slab or grade.

E. Use Galvanized Rigid Steel Conduit (GRC) for conduit penetrations through foundation walls to extend minimum 36" beyond the foundation wall.

F. Corrosion protect galvanized rigid steel conduit installed in earth or in concrete in contact with earth with two (2) half-lapped layers of 0.010" thick approved waterproof PVC tape equal to Scotch No. 50 or use factory PVC coated rigid steel conduit with all field joints coated after installation.

G. Flexible steel conduit will be allowed only for final connection to lay-in light fixtures, motors, or other equipment subject to vibrations or movement. Use liquid tight flexible steel conduit outside or in wet locations. Maximum length of flexible steel conduit allowed will be 6'. Furnish and install ground conductor in all flexible steel conduits.

H. Do not use aluminum conduit or intermediate steel conduit.

2.02 CONDUIT FITTINGS

A. Use steel compression type or steel set screw type fittings for Electrical Metallic Tubing.

B. Use steel rain tight type fittings outside or in damp and wet locations.

C. Use liquid-tight and gas-tight conduit fittings underground.

D. Use threaded fittings for Galvanized Rigid Steel Conduit.

E. Terminate all conduits 1-1/4" diameter and larger with an insulating bushing.. Terminate all conduits 1" diameter and smaller with factory installed insulated throat connectors.

F. Use grounding bushings on each end of all service conduits: on each end of all feeder conduits in

which a separate ground conductor is installed, on each end of all conduits used to protect ground conductors and on all conduits installed in concentric or eccentric knockouts or where reducing washers have been installed. Bond the bushing to the service ground or the ground conductor as required.

G. Do not use cast metal or indenter type fittings. Do not use spray (aerosol) PVC cement.

2.03 FIRE SEALS

A. Seal all conduit penetrations through fire rated walls, ceilings and floors with an approved fire barrier system in accordance with NEC Articles 300-21 and 800-52.

B. Furnish a UL classified fire barrier system as manufactured by Scotch 3M or Nelson Electric which will provide an immediate fire seal, require no curing time, and emit no hazardous or toxic fumes.

2.04 PULL STRING

A. Provide a nylon or polypropylene pull string with not less than 200 lb. tensile strength in all spare conduits and conduits installed for use by others. Leave 18" slack string coiled at each end of all raceways. Provide a hard cardboard tag for each raceway to indicate location of the opposite end of the raceway.

PART 3 EXECUTION

3.01 SUPPORTS

A. Securely support all raceways from building structure with pipe straps, wall brackets, hangers, or ceiling trapeze at points not more than 5'-0" on center and within 12" of all fittings, boxes, and bends.

3.02 INSTALLATION

A. The wiring system layouts are generally diagrammatic and the exact routing of conduits, cables, and wires will be governed by structural conditions and the work of other contractors.

B. Conceal all raceways within finished ceilings, walls, and floor except in locations where exposed raceways are specifically shown on drawings or permitted by Architect.
1. Install exposed raceways parallel with or perpendicular to walls or ceiling, with right angle turns consisting of symmetrical bends or cast metal fittings equal to “Crouse-Hinds Condulet”. Avoid all bends and offsets where possible.
2. Paint exposed raceways to match surrounding surfaces.

C. Install underground raceways as follows:
1. Within buildings, a minimum of 4" below the bottom of the concrete floor slab.
2. Outside of building, a minimum of 24" below finished grade. Furnish and install plastic yellow magnetic warning ribbon stating “CAUTION - BURIED ELECTRICAL” 18" above the top of the raceway.
3. Use select granular fill, free of rocks or hard clumps for the first 6" of backfill around underground conduits including conduits below concrete floor slabs.

D. Install underground conduit runs minimum 3'-0" from parallel runs, and 1'-0" from perpendicular runs of underground natural gas and/or propane lines.

E. Install conduit runs a minimum distance of 12" from parallel runs and minimum 6" from perpendicular runs of hot water and steam pipes, measured from the outside of the insulation.

F. Prevent the accumulation of water, dirt, or concrete in conduits during execution of the work. Thoroughly clean conduits in which water or other foreign matter has been permitted to accumulate or replace the conduit run where such accumulation cannot be removed by a method approved by the Architect.

G. Do not install conduit which has been crushed or deformed in any manner. Do not install conduit bends with rippling or which reduce the internal diameter of the conduit.

H. Do not install wiring until work which might cause damage to the wires or conduits has been completed.

END OF SECTION

SECTION 16120

CONDUCTORS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Furnish and install all conductors for power and lighting as shown on drawings and as specified herein.

PART 2 PRODUCTS

2.01 CONDUCTORS

A. Use only approved types of copper building wire with code grade type THHN/THWN or XHHW 600 volt insulation, except as otherwise noted or required by NEC provisions.

B. Use stranded conductors for wires #8 AWG and larger. Use conductors rated 90 degrees celsius minimum in wiring channels of fluorescent lighting fixtures.

C. Furnish conductors with surface printed identification showing conductor size and material, insulation type, and voltage rating at regularly spaced intervals of 24".

D. Do not use sizes smaller than #12 AWG in branch circuits carrying load. Circuits requiring larger sizes to meet voltage drop conditions, etc., are indicated on the drawings. Where larger size conductors are indicated on the drawings, use the same size conductor for the entire branch circuit, including switch legs, etc.

E. Do not use aluminum conductors.

2.02 SPLICES

A. Splice all conductors #8 AWG and smaller with Ideal wirenuts or Scotchlock spring connectors of the proper size. Splice conductors larger than #8 AWG with split-bolt or compression type connectors.

B. Provide all splices with insulation at least equal to that of the conductor.

C. Use only connectors UL listed for the type, quantity, and size of the conductors to be spliced.

D. Splice conductors only in approved outlet boxes or junction boxes. Do not splice conductors in conduit bodies.

E. Make all splices watertight in junction or outlet boxes located outside or in damp and wet locations using heat shrink insulating kits.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install all conductors in approved raceway systems.

B. Install conductors continuous without splices, between outlet boxes or devices and panelboards. Where splices are necessary at intermediate points, furnish and install suitable pull or junction boxes in readily accessible locations. Indicate exact location of all junction boxes on the As-Built drawings.

C. Do not install wires until work which might cause damage to the wire has been completed.

3.02 COLOR CODING

A. Color code all wiring at each enclosure where a splice, tap, or termination is made by means of colored conductor insulation. For conductors #6 AWG and larger colored self-adhesive tape with the appropriate color designations may be used where colored conductor insulation cannot be obtained.

B. Color code conductors of each circuit as follows:
   1. Ground wire - green
   2. 120/240 volt, 1 phase, 3 wire system
      a. Phase A - black
      b. Phase B- red
      c. Neutral - white

3.03 BRANCH CIRCUITS

A. Where a common neutral is run for two circuits, connect phase conductors to separate phase legs such that the neutral conductor will carry only the unbalanced current. Use neutral conductors of the same size as phase conductors unless specifically noted otherwise.

B. Do not install more than two phase conductors in any raceway when using a single phase system unless specifically noted otherwise.

3.04 PHASE ROTATION

A. Phase rotation will be A leads B from front to back, from left to right, or from top to bottom as viewed from the front of the enclosure.

END OF SECTION

SECTION 16130

ELECTRICAL BOXES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Furnish and install outlet boxes at each outlet, fixture, and other device location as shown on drawings and as specified herein.

PART 2 PRODUCTS

2.01 OUTLET AND JUNCTION BOXES

A. Use galvanized sheet steel boxes of the most suitable size and shape in accordance with NEC requirements on the number of conductors allowed, but not smaller than 4" square and 1-1/2" deep. Use minimum 4-11/16" square boxes where four (4) or more conduit connections are required.

B. Use cast metal boxes where exposed to damage, outside, and in wet locations. Furnish boxes outside and in wet locations with gasketed coverplates.

C. Confer with the various equipment suppliers and either use or properly provide for recessed boxes which are furnished with the equipment, such as speakers, bells, etc. Specific boxes may be called for in subsequent section.

D. Furnish and install proper type fittings, plaster rings, coverplates, and other accessories for the purpose and location of each box.

E. Do not use “THRU-THE-WALL” boxes, sectional (gangable) boxes or non-metallic boxes.

PART 3 EXECUTION

3.01 SUPPORTS

A. Support all outlet boxes by metal bar hangers or metal stud backing behind the box.

B. Do not use side mounted boxes or brackets.

3.02 INSTALLATION

A. Install boxes, after being equipped with extensions, accessories, etc., flush with finished surfaces. Replace or repair all outlet boxes not installed flush with finished face of the wall to the satisfaction of the Architect and/or Owner. In order to meet this requirement, it is recommended that the Contractor use a plaster ring 1/8" deeper than the wall finish (i.e., use 5/8" ring for ½" gypsum board wall covering) and that the Electrical Contractor be present during installation of gypsum board, tile, or other wall coverings and during installation of outlet boxes in concrete or block walls.

B. Install boxes in opposite sides of common room walls or partitions which are connected by raceway with minimum 10" of conduit between the boxes. Install boxes in opposite sides of common room walls or partitions which are not connected by raceway in adjacent stud spaces or with minimum 6"

separation between the boxes.

C. Seal around the surface of all switch and outlet boxes with plaster or grout.

D. Install boxes level and plumb.

3.03 LOCATIONS

A. The wiring system layouts are generally diagrammatic and the location of outlets and equipment are approximate. Study all available details, shop and equipment drawings in order to ascertain the exact location required for each outlet and rough in the electrical work such that electrical outlets, fixtures, and other fittings are properly fitted to the work of other trades.

B. The right is reserved to make any reasonable change in the location of the outlets before roughing in without involving additional expense.

3.04 MOUNTING HEIGHT

A. Install various outlets at the heights shown on drawings or as directed by the Architect. In general mount outlets as follows. Mounting heights are to the center of the outlet except as noted.

1.	Convenience Outlets (bottom of box)	16"
2.	Wall Switches (bottom of box)	44"
3.	Bracket Light	6'-6"
4.	Telephone outlet (bottom of box)	16"
5.	Special Receptacles (bottom of box)	16"
6.	Exit Lights	8'-0"

END OF SECTION

SECTION 16140

OUTLETS AND WIRING DEVICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Furnish and install wiring devices complete with coverplates and necessary acessories as shown on drawings and as described herein.

PART 2 PRODUCTS

2.01 OUTLETS AND WIRING DEVICES

A. In general, furnish wiring devices rated 20 amps minimum, as specified below or equivalent of Hubbell, Sierra, General Electric, Slater, Pass & Seymour or Leviton.

1.	Switch, flush, toggle, 1 pole	Bryant 4901
2.	Switch, flush, toggle, 3-way	Bryant 4903
3.	Receptacle, duplex convenience, 3-wire	Bryant 5352
4.	Receptacle, duplex, GFCI protected	Braytn GFR53FT

B. Color of devices will be Gray or as selected by the Architect.

2.02 COVERPLATES

A. Install on each outlet and box the appropriate coverplate for the function of the outlet. Install blank coverplates for outlet boxes not used. In general, furnish Type 316 Stainless Steel coverplates of the same manufacturer as the wiring devices.

B. Use die cast metal coverplates with spring return lids and suitable gasket for all wiring devices installed outside or in damp and wet locations.

PART 3 EXECUTION

3.01 INSTALLATION

A. Properly locate each outlet to fulfill its particular purpose. Do not install receptacles or boxes for power consuming devices inside cupboards, behind drawers, or otherwise so located as to be inaccessible or unsuited for the purpose intended.

B. Install all outlets and wiring devices flush with face of coverplate, with the coverplate in contact with the finished face of the wall and with mounting strap of device in contact with the outlet box.

END OF SECTION

SECTION 16190

SUPPORTING DEVICES
(See DFCM Standards)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Provide suitable supporting devices for all electrical equipment, raceways, and components as specified herein and as shown on the drawings.

B. Refer to individual specification sections for additional supporting requirements.

PART 2 PRODUCTS

2.01 SUPPORTING DEVICES (See DFCM Minimum Standards)

A. Use wood screws on wood; toggle bolts on hollow masonry units; expansion bolts with lead shield on concrete or brick; and machine screws, threaded 'C' clamps or spring-tension clamps on steel work.

B. Do not use threaded 'C' clamps on tapered steel sections. Do not weld supports to steel structures. Do not use tie wire for support unless specifically called for.

PART 3 EXECUTION

3.01 INSTALLATION

A. Secure supporting devices to building structure.

B. Avoid cutting through main reinforcing bars when holes are cut to a depth of more than 1-1/2 inches in reinforced concrete beams or to a depth of more than 3/4 inches in concrete joists. Fill all holes not used.

END OF SECTION

SECTION 16195

ELECTRICAL IDENTIFICATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Identify all electrical equipment, devices, conductors, cables, etc., as specified herein and as shown on the drawings.

B. Refer to individual specification sections for additional identification requirements.

PART 2 PRODUCTS

2.01 EQUIPMENT IDENTIFICATION

A. Use engraved laminated micarta nameplates to identify all panelboards, cabinets, safety switches, etc., black with white core unless noted otherwise, with the following minimum lettering heights:
1. Switchboards and panelboards - 3/8"
2. Disconnects, motor starters, etc. - 1/4"
3. Time switches, lighting contactors, etc. - 3/16"

B. Include the Panel Designation, the System voltage, the Distribution Panel from which the panel is served, and the Location of the distribution panel on each Panelboard Nameplate.
1. Example: PANEL ‘3LA’
277/480 V, 3 phase
SERVED FROM PANEL ‘DP4-5'
IN MAIN BASEMENT ELECTRICAL ROOM

C. Include Equipment Number or Designation, Voltage, Motor Horsepower and/or Full Loaded Amps, the Panelboard and Circuit Number from which the equipment is served on each Motor Starter and/or Safety Switch Nameplate.
1. Example: AIR HANDLER AH-2
10 HP, 12.9 fla,
480 VOLT, 3 phase
SERVED FROM 3LA-24

2.02 CONDUCTOR IDENTIFICATION

A. Identify each branch circuit and each feeder conductor at each outlet box, pull box or other accessible location with hand lettering in black India ink on the enclosure to indicate panel and circuit numbers of all conductors in the enclosure. For flush mounted outlet boxes, the hand lettering shall be done on the plaster ring such that it will be visible when the coverplate is removed.

B. Identify individual conductors in each outlet box, pull box or other accessible location according to the circuit number with self-adhesive printed markers equal to Thomas & Betts “E-Z Code” markers.

2.03 PANELBOARD CIRCUIT INDEX

A. Provide a neatly typed index, to include type of load served and the specific location of the load for

each branch circuit of each panelboard.

B. Examples
   1. Lighting, Southwest Conference Room
   2. Lighting, 2nd Floor Conference Room and Office 208.
   3. Outlets, SW Conference Room west and north walls
   4. Outlets, SW Conference Room above counter.
   5. Outlets, 2nd Floor Conference Room

C. Leave blank lines for spares and spaces such that future branch circuits may be added to the index.

D. Do not use room numbers shown on plans, use room numbers or nomenclature assigned to rooms by the Owner. Do not use remarks from panel schedules on drawing, the remarks are for the Contractor's reference only.

PART 3 EXECUTION

3.01 INSTALLATION

A. Attach nameplates to equipment enclosures with screws or rivets. Adhesive are not acceptable.

B. Install panel index behind protective plastic covering.

END OF SECTION

SECTION 16500

LIGHTING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General Conditions, Supplemental General Conditions and Division 1 Specification Sections and Section 16000 - General Provisions, Electrical, apply to work of this section.

1.02 SCOPE

A. Furnish and install all lighting fixtures as shown on drawings and as described herein, complete with all necessary wiring, sockets, lamps, auxiliaries, supports, etc.

PART 2 PRODUCTS

2.01 FIXTURES

A. Furnish all fluorescent fixtures with ETL CBM ballasts with Class A sound rating.
   1. Furnish Premium Class 'P' Ballasts incorporating a UL approved resetting thermal protector adjacent to the core and coil to prevent the ballast case temperature from exceeding 110 degrees centigrade.
   2. Furnish Advance Mark III, G. E. Watt-Miser II or Magnetek Watt-Reducer energy saving ballasts for all fluorescent lamps 30 Watts and larger unless noted otherwise on the drawings.

B. Furnish High Intensity Discharge (HID) fixtures with high power factor ballasts coordinated to the lamp which the ballast supplies.

C. Fixture Schedule as shown on the drawings.

2.02 LAMPS

A. Furnish incandescent lamp rated for 120 volt unless otherwise specified.

B. Furnish fluorescent lamps, compatible with supplied ballasts and with color characteristics as indicated on drawings.

C. Furnish High Intensity Discharge (HID) lamps suitable for the burning position which conforms to applicable ANSI designations for the wattage and type of lamps specified on the drawings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Properly center fixtures in each room. Where multiple fixtures occur, space them uniformly and in straight lines with each other.

B. Where lighting fixtures are shown to conflict with locations of structural member and mechanical or other equipment, provide adequate supports and wiring to clear same.

3.02 SUPPORTS (See DFCM Standards)

A. Furnish all necessary connectors, straps, etc., for secure mounting of all fixtures. Verify mounting

height and ceiling construction before fixtures are ordered.

B. Support surface mounted fluorescent fixtures installed on gypsum board or concrete ceilings from the ceiling with proper anchors at each corner of the fixture.

C. Furnish suspended fixtures with swivel hangers to insure plumb installation. Properly secure hanger to building structure. Install hangers such that the motion of swivels or hinged joints will not cause sharp bends in conductors or damage to insulation.

3.03 LAMP BURN-IN

A. Burn-in all fluorescent and HID lamps for a minimum of 100 hours prior to completion of the project and replace all defective lamps.

END OF SECTION